DOCUMENT RESUME

ED 112 473 95 EA 007 507

AUTHOR	Campbell, Roald F.; And Others
TITLE	R&D Funding Policies of the National Institute of Education: Review and Recommendations. Final Report.
INSTITUTION	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Aug 75
NOTE	110p.
EDRS PRICE	MF-$0.76 HC-$5.70 Plus Postage
DESCRIPTORS	Educational Development; Educational Improvement; *Educational Policy; *Educational Research; Federal Aid; Federal Government; *Federal Programs; *Government Role; Regional Laboratories; *Research and Development Centers
IDENTIFIERS	*National Institute of Education; NIE

ABSTRACT

This report reviews the education research and development funding policies of the National Institute of Education (NIE) and attempts to evaluate the impact of those policies on the nation's education research and development system, particularly the regional education laboratories and research and development centers established by the Federal government in the 1960s. The report is based on the work of ten consultants and represents a synthesis of the different consultants' views. An additional paper prepared by one of the consultants is included as an appendix. Individual chapters of the report discuss the task and procedures of the consultants, the role of research and development in improving education, present resources for education research and development, the context for policy-making at NIE, policy directions at NIE, and the conclusions and recommendations of the consultants. (JG)

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Final report of consultants to
the National Institute of
Education and the
National Council
on Educational
Research

R&D FUNDING POLICIES OF THE NATIONAL INSTITUTE OF EDUCATION:

REVIEW AND RECOMMENDATIONS

National Institute of Education
Washington, D.C.

August 1975

EA 007 507

CONSULTANTS TO THE NATIONAL INSTITUTE OF EDUCATION ON R&D FUNDING POLICIES

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PREFACE

This report is based on the work of ten consultants to the National Institute of Education and the National Council on Educational Research. The group came together at the request of the Acting Director of the Institute and the National Council in March 1975, to review education research and development (R&D) funding policies now in effect and proposed for the near future. The review was for the purpose of evaluating the impact of such policies on the nation's education R&D system, with special reference to the regional education laboratories and research and development centers established by the government in the 1960s.

This was a substantial charge, and various data-collection and analysis aspects of it merit extensive continuing attention within the Institute, as we suggest in our recommendations. More time than the three months available to the consultants would have permitted a more comprehensive survey of NIE's funding policies and possibly more accurate predictions of their consequences. We have attempted to relate the policy directions we see to certain data available on research and development in education, and to other information we gathered. But in the end, we have relied on the judgment of the consultants to interpret the probable impact of present policies and to make recommendations for improvement.

A good many people have helped us in the course of our inquiry. Staff at a number of education R&D organizations, including several regional laboratories and research and development centers, took time to confer with us during visits. Sixteen labs and centers generously provided extensive and candid written responses to questions we posed. Several dozen knowledgeable people across the country shared with us in writing their own analyses of present policies in education R&D funding. The Acting Director of NIE and many of his staff met with us, graciously accommodating our requests for early morning or evening hours beyond the call of duty. The New York State Department of Education handled the printing, distribution, and receipt of a questionnaire quickly and skillfully, for which we thank our consultant colleague Ewald Nyquist.

I am pleased to acknowledge also the consultants' appreciation of the contributions made by our Executive Secretary, Frederick (Fritz) Mulhauser, and his associate, Maureen Treacy. Without their excellent technical assistance, the work of our group would have been much more difficult. The support of other staff in the Dissemination and Resources Group at NIE is also acknowledged. The consultants alone, of course, are responsible for the content and style of this report.

As a group, we find ourselves stronger NIE supporters now than when we began. Even so, there are a number of steps NIE can take which in our view will make its funding policies more effective and we have tried to speak frankly about those steps. The report which follows represents a synthesis of the views of ten consultants.

From the beginning it was agreed that any consultant might provide an individual statement which would supplement or differ from the synthesis of the others' views. Sam D. Sieber gave us one such paper, on the design requirements of the research and development system, which we include as Appendix A.

I am most grateful to my colleagues for their patient reviews of drafts of this report.

We appreciate the opportunity to examine the funding policies of the Institute, and the openness of its leaders, staff, and contractors to our inquiry. We trust our conclusions and recommendations will be found useful to the Director, the National Council, and others concerned with improving education through research and development.

Roald F. Campbell
Principal Consultant

I CHARGE TO THE CONSULTANTS AND PROCEDURES

In a memorandum to the National Council on Educational Research dated April 4, 1975, Acting NIE Director Emerson Elliott outlined the purpose of the consultants' work. We were to give our advice to both the Institute and the Council about "alternative policies which the Institute might adopt for funding education R&D activities." Within this extremely broad general mandate, we were to give "special attention" to the regional educational laboratories and research and development centers established by the Federal government in the last decade. Elliott further amplified the charge:

> This advice will be based on a review of NIE funding policies and their effects on various R&D performers and will further be based on the consultants' assessment of:
>
> (1) the existing capacity within the nation for high quality educational research and development;
>
> (2) the past relationship of various federal funding policies to the maintenance and improvement of research and development capacity--to meet both current and projected needs;
>
> (3) the potential effects of alternative NIE funding policies on the maintenance and improvement of such capacity; and
>
> (4) the relative advantages and risks of principal alternative funding policies.

The memorandum explained part of the motivation for the study by reviewing the history of scarce funds and sharply focussed programs within the NIE, and the resulting likelihood that some previously-supported R&D institutions "will not receive NIE funds equal to past levels of Federal support (i.e., their capacity will be underutilized by NIE)...The question then arises whether capacity not now being utilized by NIE and other funding sources under their current priorities is of such value to the education community that it needs to be preserved through extraordinary efforts." Mr. Elliott also stressed to the Council the Institute's concern to establish and maintain an effective education "R&D system" as called for by the authorizing law, and the Institute's need for advice on the effects of its policies on the system. He noted the particular concerns of the regional laboratories and R&D centers, which believe that the current Institute plans for Fiscal Year (FY) 1976 will in some ways damage their capabilities to the detriment of the nation's R&D effort.

For the consultants, Roald Campbell attempted at an April 4 meeting with the Council to make clear that the charge was very broad and that the time available would permit judgment and advice based chiefly on experience and general knowledge, rather than extensive fresh survey of the state of the nation's education R&D. The Council joined the Acting Director in expressing support for the consultants' work.

To carry out the charge, the ten consultants determined to use the following procedures:

1. Meet in person with NIE management, program staff, and selected project officers; commission a review by staff of present NIE policies and their context; solicit in writing the views of NIE staff.

2. Meet with laboratory and R&D center directors in person, make visits to selected institutions, and gather further information from all labs and centers by a questionnaire.

3. Meet in person with representatives of groups which have interests in education R&D, including teachers, researchers, teacher-educators, administrators, Congressional staff, and staff of other Federal agencies.

4. Solicit in writing the views of individuals knowledgeable about R&D and related areas.

5. Visit selected R&D-performing institutions other than Federally-created laboratories and centers; and others that were at one time laboratories and centers, but have ceased to have major Federal support.

6. Review selected literature on education R&D generally, and the Federal role in the field.

Two weeks after the initial meeting with the NIE Director and Council on April 4, the group met with representatives of the regional laboratories, R&D centers, and the Executive Director of the Council for Educational Development and Research (CEDaR) at Chicago, April 18. At that same time, the consultants reviewed the staff paper on the present policies of the Institute, and the context of policy-making. In the following month, to begin assessing the state of present capacity for R&D, consultants visited eleven R&D institutions, wrote to over 50 persons in the field, and arranged a variety of meetings with individuals and groups. During the same period, staff prepared memoranda on various subjects requested, and circulated relevant literature.

To gather up-to-date information on the regional laboratories and R&D centers and on the likely impact of NIE policies there, the consultants drafted a questionnaire and reviewed it with the lab/center group at Chicago. After further modification, ten questions were posed to sixteen institutions. Confidential responses to one sensitive question on strengths and weaknesses of past relations with the NIE were channeled directly to one consultant; the rest were analyzed by staff. (The questionnaire itself, and summaries of responses to certain questions, are in Appendices B and C.)

For a third meeting on May 22-24, consultants exchanged written reports on meetings and visits, and circulated replies to correspondence and questionnaires. Based on extensive discussion of findings, a draft of consultants' views was prepared for a fourth meeting at New York, June 5-6. Further conclusions and recommendations were considered at that time, resulting in additional drafts circulated for review and comment.

To gather information about the Institute, the consultants met twice with the Acting Director, and with the newly-appointed Director. In addition, consultants were briefed about each of the Institute programs by Associate Directors, and one consultant interviewed seven project officers from different program areas to understand policies at the working level. Consultants also asked each program group to rate current work under way at laboratories and centers, as to its quality and relevance to the mission of the unit.

Appendix D includes a complete list of places visited, persons and groups met with, and correspondence received.

The procedures described have given the consultants a three-month glimpse at the present state of education R&D, including the NIE and certain performers within that system. Literature such as the draft 1975 Databook on the status of education R&D in the United States has added a larger perspective.[1] Nevertheless, as stated in the initial meetings with the Director and the National Council, the discussion, conclusions, and recommendations which follow are based on the consultants' general experience and contact with Federal agencies, universities, research and development organizations, state education agencies, and local school systems, as much as on new data collected.

Our report is organized into four sections of analysis and discussions and a final section of conclusions and recommendations. The chapters grow increasingly focussed, moving from consideration of the role of research generally in education and the resources available for R&D, in Chapters II and III, to discussion of the NIE context and policy in Chapters IV and V. Conclusions drawn from the discussion in all four chapters, and specific recommendations which derive from them, are presented in Chapter VI.

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[1] W. Paisley and associates, The Status of Educational Research and Development in the United States: 1975 Databook (Washington, D.C.: National Institute of Education; pre-publication version, May 1975).

II - THE ROLE OF R&D IN IMPROVING EDUCATION

A broad climate of expectation about research generally, and social science research particularly, affects policy-making within the NIE. Hence we feel it is useful to begin with some attention to more general aspects of the role of research and development in improving education. In this section, we note some current voices of pessimism, offer some explanation of inevitable difficulties facing R&D in human service fields, and end with our own sense of the usefulness of the activity of disciplined inquiry.

An observer in the last few years could note a wave of criticism and uncertainty about research:

- A recent monograph sponsored by Ralph Nader attacks the objectivity and quality of work by the nation's most prestigious scientific body, the National Academy of Sciences.
- A vote of the House of Representatives directs the National Science Foundation to submit every proposed grant of funds for Congressional review prior to award.
- Members of Congress have expressed strong concern over the social science R&D contracting procedures throughout the Department of HEW, and over the support of social studies curriculum work and other social research at the National Science Foundation.
- Congress is even beginning to question some health research, as continued billions invested particularly in cancer studies seem to have little immediate result.

And at the same time as these events at the Federal level concerning research generally, one could also note questions raised in the education community about the value of educational R&D. Decision-makers are said to be pressing for "hard evidence" that new products will "deliver" the results that policy boards are seeking through accountability schemes. Staff within education, as in other human services, may be coming to view the results of research as chiefly a series of complications to their professional lives: recommendations for uprooting the structures and personal relationships that once gave security within the basic working units or organizations or even wholesale condemnations of the present system and the urging of its rebuilding in some other form. Such "R&D results" do not call forth much support from teachers or other workers in the field.

For ourselves, we have noted some characteristics of inquiry in the social or human sciences and characteristics of the education system the inquiry is aimed at helping, which perhaps can give perspective on both the inflated hopes of the 1960s and the pessimism of the mid-1970s.

First, in all human service fields, education included, the demand for purely service funds *always* exceeds the available resources. As a result, money spent for inquiry and development of ideas will always be suspect, as a competitor against supplying "the real needs" of children, the elderly, the handicapped, or others. Thus, we expect an inevitable need for justification, explanation, and attention to the politics of funding. Oversight--by Congress or other funding body--of how research funds will be spent, and pressure against such spending, are thus not a temporary condition, but a permanent fact of life.

Second, the American public education system is not controlled from a single point, and is subject to influence from the full spectrum of social forces--fads and popular whims, court decisions and evolving legal philosophies, incentives created by shifts in marginal funds available from state or Federal sources, and the decisions of thousands of atomistic actors--clients, providers, and controllers of education. Furthermore, in a system so vast as education, even similar units (schools, districts, colleges, state agencies) are different from each other, and are changing and developing at varying rates, under varying pressures. The system characteristics of openness, vulnerability, and complexity have implications for inquiry activity:

- knowledge will inevitably be tentative, as the system is constantly changing, and even is altered by inquiry into it;

- knowledge will not automatically be universally applicable, even to all like-named pieces of the system ("schools," etc.);

- inquiry will inevitably be seen as a weak tool in a process of change and improvement, as so many other forces press on the system, particularly now the forces of legislation, court action, and tight money.

A third limitation on the usefulness of inquiry is that even at its most successful, the results will not be self-executing. Actors in the educational system have free will to some degree, and have diverse preferences which they seek to carry out. Thus a research finding that certain activities by the teacher can reliably produce certain results in a classroom will require a long chain of deliberate action to produce results--starting with the question of goals or ends, "Does anyone *want* to attain the results we can now reliably produce?"

Fourth, another consequence of the complexity of the process being studied in education research is that an enormous range of kinds of inquiry are relevant. We must accept the fact that any one study or line of research, at any particular time, will yield few "breakthroughs." Education involves the physiology of eye and brain, the psychology of attention, memory, and learning, the sociology of peer, group, and organizational interaction, and so on. Can any one research activity be faulted for not unlocking the whole puzzle, as was literally possible on some areas of physical science not so long ago?

These four features of inquiry in education--combine to give us restrained expectations for the role of research and development in improving schools. Both Congressional and professional observers of education R&D need to adopt realistic hopes for short-run impacts of the enterprise. We all must moderate the impulse to rip up the structure and activity every year or two if it seems not to be delivering rapid improvement. The common observation of the "failure" of social programs of the 1960s should not be allowed to lead to hasty pressure for catching up in areas of missing knowledge. A crash program and accompanying inflated goals is as unrealistic in the area of knowledge-production and utilization as in any of the service programs of an earlier era against poverty or other problems.[1]

For the National Institute of Education, we conclude that there is a need for the Institute to speak out more forcefully, to lead the debate and to express its own goals rather than primarily reacting to others. The National Council on Educational Research, it seems to us, has made a good start in talking about the reauthorization of NIE. Their minutes show a concern that the NIE not be expected to have solved the problems of education, but rather to have placed a variety of useful ideas and products into channels from which educators can elect to use them. But with a new Director, and a full-strength Council in the near future, it will be essential to do a great deal more explaining of the grounds on which the NIE wishes to be viewed--through highly-visible statements and more extensive publications and communications with the field and the Congress.

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[1] We note familiar rhetoric used recently in a news story to describe another "attack" and the subsequent disillusionment. "War on Cancer Stirs Political Backlash," New York Times, May 27, 1975, p.1.

Having urged that expectations be clarified, we reaffirm completely the wisdom of Congress and the Executive Branch in establishing the Institute, as an important means can education. Though the Institute's life has been brief, and its critics legion, its future potential is fully equal to the Institutes of Health or the Science Foundation, and its stature should be equivalent. We find the untapped possibilities so great, even within moderate expectations of results both in the Institute's direct support of research and as well in a coordinating and planning role for a wide range of public and private inquiry in education, that we urge long-term authorization. Further, though we recognize the current tight budget, we urge both the Administration and the Congress not to unduly narrow the future authorization of funds. The annual spending ceiling of $80 million in the Administration reauthorization bill is far too low, and should be doubled in the first year alone. The appropriations process provides a good check on the actual expenditure plans; we see no need to set in the authorizing statute such a restrictive limit to the potential activity of the Institute.

We conclude that there are inevitable limits to the role of inquiry as a tool of educational change, and that these need to be recognized far more than they have been by the Institute, its publics, and the Congress. Yet we also judge that the limits have hardly been reached, and that the legal and financial authority of the Institute should be commensurate with the potential and the challenge. In the next section, we turn to consideration of the resources available to carry out disciplined inquiry into education.

III THE PRESENT RESOURCES FOR EDUCATION R&D

Placing the NIE policies and their impact in a context has been a key element of our work. Our charge from the first has included some attempt to assess the "capacity" for high quality research and development in education in the country, against which to test present and proposed NIE policy directions. This capacity includes scientific and technical personnel in diverse roles of researchers, developers. It includes the institutions which house these individuals, and their varied patterns of structure, incentive, and performance. And capacity depends also on the coherence or system-quality of the aggregate, the degree to which the whole is greater than the sum of the parts. We begin with some general impressions we have formed about the development of education R&D to this point, then discuss in more detail some concerns we have about the present supply of skilled people in the field, and the forms so far used to arrange them. We conclude the section with our assessment of the relatively weak integration or inter-relation of the overall system.

The consultants have been impressed with a number of features of the expansion of the education R&D effort in this country in the last two decades:

1. There has been an impressive history of growth of the resources for education R&D, including growth in size and sophistication:

   ° increases in funds invested (a trend until recently);

   ° wider range of talent involved in such work;

   ° new people added to the resources through training;

   ° new institutions formed or drawn into education R&D owing to new resources and interest;

   ° emergence of new technologies and specializations such as education research management, systematic product development, and evaluation.

2. There has been a striking continuity of Federal support for education R&D across five very different administrations--from the passage of the Cooperative Research Act in 1954 to the present, leading from the first funds for research, to

creation of new external institutions in the laboratories and research centers, and finally to creation of an entirely new Federal agency, the NIE.

3. There appears to be an increasing volume of research information and educational products available year by year--though not always readily known, accessible, or even in demand.

4. There is steadily increasing sophistication of study and discourse through the work of social scientists and others who look beyond the classroom, survey experts who can provide very large samples, analytic techniques to permit large-scale generalizations and evaluation studies of a decade of local and Federal initiatives which can be treated as field experiments.

The consultants have also come to share some less positive perceptions about the present aggregate of R&D resources, which will be amplified in the rest of this discussion.

1. The numbers of professional and technical staff now available for education R&D are markedly inadequate by a number of criteria.

2. The distribution of R&D effort by function and institutional base, as well as the coordination or system-quality of the whole, leave a great deal to be desired.

Staffing

As the U.S.Office of Education's former chief R&D planner wrote in Science in 1970, "a primary element in educational R&D policy focusses on how manpower roles and requirements are defined and where those kinds of manpower can be found."[1] Though there appear to be literally no up-to-date figures on education R&D personnel, extrapolation of past data and guesses based on professional association memberships place the total at about 10,000 people.[2]

Since this figure no doubt includes many such as university faculty whose primary work is other than R&D, there may be only 7,000 or 8,000 total person-years devoted to education research, development, and dissemination.

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[1] H. Gideonse, "Policy Framework for Educational Research," Science, 4 December 1970, p. 1056.

[2] Paisley, The Status of Educational Research..., Chapter 4, Section C.

Even if this estimate is low, we are convinced that the absolute numbers are too small. Such a human resource base is not nearly large enough for sustained inquiry to match the complexity, range, and scope of the problems in the schools and colleges of the nation. Several different criteria suggest this conclusion to us.

The inadequate size of the total effort is dramatized by comparisons with research and development in other areas. Striking differences quickly are apparent if we make contrasts with the 10,000-person total workforce in educational inquiry:

- In health, the government's lead agency in health R&D, the National Institutes of Health, itself employs over 4,000 scientific R&D staff, and reaches many more through its 15,000 contracts and grants to over 1,200 institutions.[1]
- In energy, a single one of the Atomic Energy Commission laboratories typically employs an R&D staff equal to a substantial fraction of the entire education R&D group.[2]
- The National Science Foundation collects data on industrial R&D which show that large firms (with more than 10,000 employees) have 28 R&D scientists and engineers per 1,000 employees, and smaller firms (5,000 to 10,000 employees) have 19 per 1,000. Public elementary and secondary education involves about 2.5 million teaching and administrative employees, for a ratio of less than 4 R&D professionals per 1,000 employees.[3]

Considering the role of R&D within Federal education policy, the manpower seems inadequate also. In the last few years, policy-makers have described the Federal role in two ways. First, the government leads through seed money or the creation of incentives for attention to neglected groups and issues through categorical grant programs. Second, it will strengthen the foundations of education through support of research, development, and dissemination of improvements in practice. Whether or not this strategy is a wise one--for instance, in contrast to increased general aid to education--its success critically depends on the supply of R&D resources. It seems clear that a workforce of the size we see has hardly multiplied to the extent necessary to implement the current Federal policy. But we are convinced of the long-run importance of inquiry as a force for improving education, and if its potential efficacy is undermined in the public and professional mind, that will be a major loss than even substantially increased general aid programs could not compensate for.

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[1] Basic Data Relating to the National Institutes of Health: 1975 (Washington, D.C.: NIH, February, 1975), p. 45.

[2] The Energy Research and Development Administration, Public Information Office, gives the estimated employment of scientific and technical staff at Argonne National Laboratory at 2,500, and at Brookhaven National Laboratory, 2,400.

[3] National Patterns of R&D Resources: Funds and Manpower in the U.S. 1953-1974 (Washington, D.C.: National Science Foundation, 1974), p. 11. On teachers, The Condition of Education (Washington, D.C.: National Center for Educational Statistics, 1975), p. 173.

Next, the effort is too small when measured against the decentralized and fragmented character of the system it is intended to influence. It is clear that the production of research, the development of new ideas and materials, by some individuals and groups separate from the operating education system is not enough. Publishers, state agencies, information systems, journals, and other "linking agents" are, of course, parts of the picture. We agree with NIE that dissemination activity will require substantial, increased investment, but beyond that, probably every large system must have its own R&D capacity no matter what dissemination networks exist. There are 1,600 school districts with enrollments over 6,000 pupils, and if each were to employ a minimal R&D group of five, the nation's R&D workforce would need to be doubled, and we will make several recommendations urging the Institute to begin to see local and state education agencies as R&D performers, not mere recipients or beneficiaries of others' work".[1]

From these considerations, we do not emerge with a numerical goal for R&D personnel towards which to strive. Ideally that should result not from ad hoc comparisons such as we have made, but from a programmatic analysis of what must be done, and how many people of what sorts are needed to do it. We hope the enlarged capacity for monitoring and analyzing the R&D system which we will recommend for NIE could begin to provide the data on which such a plan could be built. Such data include better figures on the present location and types of R&D personnel and analysis of policy issues such as how best to strengthen staff for the functions needing to be performed in the presently-underserved places such as school districts.

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[1] It has been argued that the workforce in education R&D is at its present size as an accurate reflection of the demand from the market, so that we are wrong in suggesting an increase contrary to this natural balance. We feel the potential of R&D has hardly been given a true test, in view of the brief time it has had substantial support, the primitive nature of the dissemination system, and the hitherto weak results from much research. It seems fair to call for some further subsidy of R&D under stable conditions of production and field dissemination to at least gather further data on the issue of demand.

In the absence of such a plan, we favor the relatively simple approach of providing incentives to attract the very best quality of people into the research and development field, both new entrants and those already established in other fields. This approach does not set a number of professionals to be reached at a certain date. It simply provides a mechanism for the system to expand and then throttles down the incentives at some point where intuition and collective judgment indicate the system is getting too large. We believe this was partly the history of the growth of the natural sciences in this country and has worked reasonably well.

The nature of the incentives is fairly clear, including the following elements:

- Attracting recent graduates into the field because of the availability of jobs; this is especially possible in the next decade owing to the oversupply of PhD-trained individuals. A substantially increased R&D effort in education thus can take advantage of a golden opportunity to attract some of the best of the current crop of students.

- Attracting new students by the traditional fellowship incentives--though we favor partial self-support by each student; despite the current Federal policies against fellowships, they are a logical outgrowth of our argument about the need for growth of staff.

- Attracting already-trained persons who are now in other fields, but who could make contributions in education R&D. This could be done through mid-career education, change-of-field grants, or other incentives that support and ease the transition.

Particularly in view of our emphasis in later sections on the need for high-quality work, we find the present staff size for education R&D simply inadequate, and we wanted at the outset of our assessment to call this fact to wide attention.

Our judgment as to the aggregate shortage of R&D professionals does not mean we then find all the present people to be of acceptable quality, all present institutions worthy of support, or all R&D functions in their proper balance and relationship. We do, in fact, have some more refined perceptions as to both the functions and the institutions, and about the system's inter-relatedness.

Functions

It is difficult to know exactly what functions are presently performed in what proportions by the R&D workforce. The 1975 Databook (referenced earlier) gives, without explaining the method used, an estimate from one survey, which is shown in the first column of the table below. We also asked each of the regional laboratories and R&D centers to describe each current activity, to categorize it as to its major purpose, and to give the number of professional staff assigned to each project. A tabulation of those reports is shown in the second and third columns below.[1]

Distribution of the R&D Workforce
According to Various Sources

Type of work	1975 Databook Report	Regional Lab Survey	Center Survey
Research	33%	10%	29%
Development	50%	61%	53%
Diffusion - Dissemination	17%	3%	6%

Despite gross definition problems in these figures, the rank ordering may be taken for some indication of imbalance. One set of criteria of balance are proposed in Sieber's paper in the appendix. If only in political terms, the present allocations are undesirable, and in terms of testing the true demand for R&D also, the inattention to dissemination makes for a weak experiment. Thus, while we hope the research sector can grow, we hope the dissemination sector can grow even more and that the development staff can be better distributed.

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[1] The totals in the second and third columns do not add to 100% because we omitted staff on projects categorized in several domains, and some staff were in work outside R&D completely, such as training. The figures are obviously weak in another respect, since within a "development project" there may be researchers, developers, disseminators.

On the research side, especially in the areas of more basic studies, the kind of people who can do good research are relatively rare. Therefore, we are not talking about a large increase in this category. But in addition, the nature of development and dissemination activities are such that they require group and team work, specialization of functions and division of labor, and they must take place in many diverse locations. These characteristics set up manpower requirements of much greater magnitudes than in basic research certainly, and even than in most applied research. And especially if systematic program analysis and development is increasingly to take place within school systems, as we feel it must, and as state and school-district leaders tell us they agree, that set of R&D staff will need to be expanded.

Institutions

Turning, then, to the organizations now available as settings for education research and development, we find an adequate range in existence. Clearly we do need institutional structures beyond the **universities** and service-providers themselves. And we do need to "make a market" so that good research people can find careers other than in the university. Different structures attract people of different motivation, also. To cite energy R&D again, those national laboratories are able to recruit and hold outstanding engineers and scientists, persons who could command much higher salaries in industry, because such individuals wished to work under the more settled conditions of a government-funded laboratory. On the other hand, there are excellent professional staff who do thrive on organizational change in any field.

Our point is that there are different kinds of institutions which seem to us necessary to organize the diverse kinds of talent education must call upon in R&D. These include the for-profit research, data-handling, testing, and publishing firms; those nonprofits which also delight in acting in an entrepreneurial fashion; the regional laboratories; university-based individuals and groups; and the state, intermediate, and local education agencies. These seem to make up a balanced institutional complex, or at least we do not immediately conceive of a type of R&D setting omitted, and essential, except possibly for intramural research at the NIE itself. We will make some comments about the capacities and present utilization, and some ways capacities might better be used, for each in turn.

Independent firms. The entrepreneurs, either for profit or not, represent a quick-response capability, and an almost incredible flexibility of structure and personnel depending upon the market. As two of our group reported after a visit to one such place:

> The interesting phenomenon is the difference in expectations from what the laboratories and R&D centers have. (The research center we visited) is really a business and infused with the

ethic of business. It is a supremely confident organization which feels that unless the dice are loaded it can compete effectively with other comparable organizations or labs and centers. They maintain they have the ability to attach and detach staff easily as problems arise on which government or other parties want help. They make extensive use of consultants to get the flexibility and the expertise they know they need. They apparently have not only the ability but an enthusiasm for managing in a situation of uncertainty. They exist on a year-by-year contract-by-contract basis, and want it that way. They believe it keeps them on their toes and keeps them lean, and as a result they welcome annually facing the test of specific contract renewals. Naturally, they tend to recruit people who are not devoted to tenure-type situations.

It seems unlikely that any other types of organization will ever have the ability to produce research-based analyses with the speed required by emerging policy debates, to begin national studies within months of the award of funds, or to do any other tasks that are not rewarded in the university or where the university time-perspective is too long. There are a number of first-rate such entrepreneurs in the social science field, and they should not be excluded from the government's R&D effort, but should be recognized for their unique capacities.[1]

Universities. It seems to us that universities will continue to include many of the first-rate scientists and scholars who are working to extend the basic knowledge upon which education ultimately rests. Indeed, because the range of relevant scholarship is so immense, its organization for productive work on education is most difficult. Our most basic consideration after looking at the capacity of universities to contribute to education R&D is that only a few models of such organization are evident--the R&D center and the single-investigator, and

[1] We note the interesting case of Educational Testing Service, a non-profit agency where an educational product or service (tests) has also generated substantial basic and applied R&D in the firm. Until recently, perhaps, educational materials publishers spent little on R&D, no doubt as their market was not based on factors that could be improved by education research. This may be changing, as public systems and their suppliers feel the effects of pressure for accountability. We also note the occasional independent research allowed employees of RAND Corporation. Clearly, the location of R&D, and its diverse sponsorship, is a complex question which must continually be addressed by NIE data-gathering and analysis.

that these needlessly limit our ability to use that capacity.

The need for involvement in education research of scholars in basic disciplines, and the need to move beyond the isolated work of individual researchers, led the U.S.Office of Education to establish the university-based research and development centers in the 1960s.[1] One of our correspondents, closely familiar with the origins of the centers, suggests that whatever the mechanism, there is a continuing need for support of basic social science in relation to education:

> From the very start, the program for R&D in education took these facts (of little other support for basic social science) into account and tried to get good social scientists to work on education programs... The situation is still the same. In fact, the Federal government seems less likely than ever to set up a program in support of basic social science research, for obvious political reasons. And I take it that other funding sources are not likely to take up the baton.
>
> If that is the case, then educational research is still in the fix it was ten years ago; it has to smuggle in basic research in the social sciences while it pretends that its program is designed to concentrate on educational matters. Nor does there seem to have been a notable increase in such basic research by "educational" reseachers. We cannot, therefore, stop worrying about education's external intellectual bloodstream.

And in addition to the continuing need for sustained work on fundamental problems from a variety of disciplines, we would note that the organization of the work should include a continuing link to the world of practice. In this way, the advanced students who must increasingly find jobs outside the university will have a sense of how R&D can relate to policy and practice, and in addition, the university work will stay aware of the needs and realities of the system.

However, university researchers are in many ways unsuited to the demands of tight timelines and pre-specified objectives to be attained, which often accompany Federal R&D funds.[2] Problems in education are in many cases millennia old, and a university group or any other for that matter, can not be expected to find a breakthrough where many have already struggled and made little headway, particularly if we expect the diverse approaches of a number of disciplines to be integrated.

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[1] Appendix C lists the present R&D centers, their parent universities, and other data on staff and budget. The history of their establishment is well summarized in the 1975 Databook, Chapter 4, Section C.

[2] James Coleman's essay on "Policy Research in the Social Sciences" (Morristown, New Jersey: General Learning Press, 1972) is an excellent discussion of how universities should not be expected to perform certain kinds of studies intended to quickly influence policy. The cancer example cited earlier is another instance of pressure for solutions, seen as inappropriate by basic researchers.

The nine present R&D centers have a range of work under way, from heavy concentration on development and marketing of products, to more detached work to understand educational activities. They vary, also, in the degree of emphasis on a common mission within a center. The quality and usefulness of their work varies, as judged by educators in the field and scholarly colleagues, and it seems fair to say that owing to the diversity of the work, it would be hard to judge "centers" according to a common criterion such as contribution to knowledge or help to the field.

Organizing university talent for large efforts in education R&D inevitably confronts issues such as:

- the balance between autonomy in staffing and ties to the departments;
- independence of action and research vs. closer ties to the government;
- term of funding.

We think that past pressures for rapid development and evidence of "impact" have probably forced many centers to neglect basic research and to assemble people who could work for immediate results under pressures considerably different from those in typical academic life. The resulting lack of consistent interchange with scholars in the disciplines seems a decided loss. Again, the government's need for demonstrable products has probably led to closer ties to funding agencies than universities typically would wish, and the terms of funding may become shorter, with repeated competitions in order to maintain pressure and accountability. These developments seem to be barriers to taking full advantage of university scholars, and seem almost designed to turn segments of the university into independent and lower-status agencies.

If the R&D center is one model presently in use, the single-scholar or small team is the other. Many of these were represented in the Field-Initiated Studies competitions held by the NIE two and three years ago (in which 82% of the funds went to colleges and universities). We agree that diversity of arrangements is necessary, and we do see a place for support of researchers who do not wish to participate in large organizations. Indeed, the superior researchers in any field who can obtain funds easily see no need to have those dollars siphoned off to support "overhead," see no reason to join with others of lesser rank, and as a result are not often found in "centers."

However, our general view of university capacity, and its present use, can be summarized thus:

1. The need to support basic work in social science is as great today as when the R&D centers were first established.
2. A very wide range of university talent in numerous departments and professional schools, can be related to the national R&D effort in education.
3. While the university effort in education R&D needs for various purposes to be related to the world of practice, the work should not be judged by its immediate contributions to solving specific problems in the field.
4. Arrangements to capitalize on the talents at universities must take a great many forms, not simply centers or isolated professors, and must take into account the need for relative independence and long-term support for maximum effective use of that talent.[1]
5. R&D in education must be organized at universities in such a way as to maintain the links with departments in the disciplines beyond education which are its intellectual underpinnings.

The last two points are most important to us. We feel it is particularly essential to imagine ways of relating to universities that draw on the best people there, rather than relying exclusively on a separate entity which establishes its own staff on soft funds, potentially unrelated to the academic and intellectual life of the rest of the university. The arrangements used must be apt for engaging the present scholars, where they have contributions to make, not establishing a second-class set of citizens, impermanent and isolated.

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[1] Sam Sieber of our group has argued in his book Reforming the University: The Role of the Social Research Center (New York: Praeger Publishers, 1972) that the "integrative functions" of university research centers are severely hampered if such agencies are not able to operate as secure and stable entities. He sees this integration taking place as the centers span boundaries between usually distinct areas: university and society; research and service; student and teacher (through research apprenticeships); education and basic disciplines; intellectual work and management.

In addition to persons in regular departments and the schools of education, there are other resources in universities not much tapped at present. These include:

- Schools of business, which have a growing interest in public management;
- Policy-science departments or institutes, where people are coming together around general issues in the design, implementation, and evaluation of public programs;
- Schools of public administration, where focus is shifting towards policy-making, as well as its execution.

We do not have a clear formula to suggest that will in all cases hook the right parts of universities together for various education R&D purposes. We do have a sense that more options should be explored, as the present capacity is under-used and its procurement bound essentially by two limited concepts--the center and the individual or small project. We have in mind a least two other modes.

1. An up-do-date survey should be done of university faculty and the departments, schools, and institutions in which they work to determine their potential for an interest in educational R&D. Based on a determination of high potential, the precise form of the organization could well be left to the university or a major segment of it, with considerable discretion left to the grantee to put together a combination of people in whatever form and manner is appropriate to it. If this turns out to be through an established R&D center, so be it. If the mechanism is an internal university foundation, so be it.

2. When the government defines certain work needing to be done, and finds scattered university resources available that may not naturally come together in a joint effort, procurement rules must be interpreted to allow the government to bring the parties together, broker agreements, and emerge with a total resource greater than the parts alone.

We have been told several times of the success of the National Science Foundation in drawing world-renowned university figures in Boston and Cambridge into science curriculum development. The method was a loose, time-limited entity called Educational Services Incorporated (ESI), which had a few central services, but chiefly organized the part-time efforts of many others from the university community. While we feel this example is in many ways unique, it does underscore a general point, that education R&D in the present era need not hold to one or two ways of organizing university resources. We find special merit in the argument drawn from this example, that we need not be bound to permanent institutions, in universitites or anywhere, that live on after their missions are completed.

When we return to specific NIE policies, we will discuss further our notions of reducing the present number of centers, which would give room for creating a variety of new arrangements that suit the NIE program areas and are better adapted to the special circumstances of universities.

Laboratories. The third set of institutions whose capacity we must address is the regional educational laboratories, established by the U.S.Office of Education upon passage of new legislative authority in a 1965 amendment to the Cooperative Research Act. As the Background Report on the "Labs and Centers"[1] outlines, twenty were created originally, dispersed throughout the country as the name implies. As appropriations failed to increase, nine were closed by USOE in 1970, and four more have ceased to receive Federal funds since then. Even with these reductions from the original numbers, by the time of our survey of the remaining seven laboratories in April 1975, they employed almost 700 full-time equivalent professional staff, or close to ten percent of our estimate for the nation's entire R&D workforce. Further, their annual budgets in FY 1975 totalled over $20 million, $18 million of which came from NIE.[2]

Our general feeling, after considerable listening to leaders of the laboratories both together and individually, examining lengthy questionnaire returns, talking with past and present Federal government staff, and having the benefit of the written views of several dozen observers of education R&D, is that the concept was distinctive and important when first broached, and remains sound. However, we are wide of the mark in many ways in the present implementation of it.

By "the concept," we mean at the most basic level, the idea of establishing long-term R&D institutions distinct from both the university and the operating education system, and not in the market to do odd jobs of research or service, but to carry on substantial work on complex problems. The task force which originally framed the idea had in mind the creation of a small number of high-quality national laboratories comparable to those of the Atomic Energy Commission, and perhaps with other features similar to some of the clinical facilities of the National Institutes of Health.

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[1] Prepared by NIE staff for the National Council on Educational Research for its March 5, 1975 meeting.

[2] Appendix C gives further data on laboratory staff and budgets.

How has the concept weathered a decade of efforts to implement it? One former official of the U.S.Office of Education who was closely involved during the creation of the laboratory legislation offers this further personal recollection of what the laboratories were to be:[1]

> The laboratories would capitalize on (the potential of great advances in basic knowledge) by devoting attention to basic research but would devote prime attention to "development and dissemination of educational innovations." The laboratories would have strong links to state departments of education, to school systems (particularly for teacher training and field testing), to universities and industry. Every laboratory would have one or more experimental schools "more or less under its own jurisdiction." Together, the laboratories would form a nationwide network to test the feasibility of new methods. They would also establish effective channels of communication among themselves, collaborating easily and continuously. Teacher training was to be an integral and major part of the lab program, with new models for the education of teachers emerging in the process.

Despite these specific early hopes, the laboratories in fact came to enjoy a relationship with the U.S.Office of Education in which they proposed work they wished to carry out, and the Office negotiated and agreed. The Federal R&D officials lacked sufficient time or mandate to develop long-range priorities against which to judge laboratory work plans, and the initiative thus rested effectively with the labs themselves, in competition only with each other for shares of a specific segment of the USOE budget. In this way, laboratories were able almost to set their own agenda, and to come up with their own best sense of what functions to perform, for whose benefits, with what tools. Each institution worked under a single contract.

In 1972, the USOE decided that this relationship should be changed so that the government would henceforth be purchasing specific programs of work, under separate contracts for each program. A contract price and term would be negotiated at the outset, with products and a schedule for delivering them. The NIE inherited this incipient policy, and concluded the latter part of a review process begun at USOE to decide what specific work should be supported and for how long.

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[1] Samuel Halperin, "Title IV of the Elementary and Secondary Education Act of 1965: Executive Aspirations and Legislative History." (Prepared for presentation at the 1971 annual meeting of the American Educational Research Association.)

Thus, the laboratories were seen at first as a unique institutional capacity, able to plan and set their own direction subject only to constraints of budget and occasional internal and external reviews. As funds stabilized, as judgments had to be made about terminating Federal support at some laboratories, and as specific programs of work have become the focus, questions about the cost-effectiveness of this form of R&D and the impact of its products have been raised more and more. In this second era of relationships, the laboratories seem to have been viewed as organizations like any other, which had agreed to do a job, and should be judged on the work being done. In a sense, the government could argue that its R&D management approach has matured, from a time when simply establishing some new institutions was in itself the major challenge, requiring considerable discretion left to the field to carry out the novel kinds of work everyone had in mind, to the recent years when managers felt more confident in the assumptions that the system could take care of itself, that adequate institutional capacity existed, and that the focus for federal funds could shift to major R&D priorities determined after wide consultation with both practitioners and researchers.

As a legacy of the early years of laissez-faire, the seven current laboratories differ enormously from each other, and the specific work they were contracted to do after the 1972 review reflects this diversity, as it was largely based on what had gone before. So we find laboratories at present varied in their sense of what schools and students need, in their internal governance and policy-making, in their ties to their religion, in the degree of emphasis on service to the local schools nearby, in the balance of functions performed such as research, development, dissemination or evaluation, and in the degree of programmatic coherence and mission emphasis. Also, they differ in their current degree of dependence on the NIE.

Thus the laboratories are a patchwork of capacities and interests, and though we could hardly evaluate each laboratory against a set of criteria, our impressions (and those of our correspondents) were of very diverse quality with respect to any specific capacity such as product development or evaluation. In this connection, we recorded from our discussions in the field some serious issues and criticisms concerning the labs' present capacity. Among these were:

o Major resources devoted to curriculum designs and materials of instruction, without adequate study of the schools' need for them or their appropriateness to real problems.

o Little sophistication in marketing and sales, and unfortunate relations with commercial publishers, one of whom described as follows relationships with a laboratory: "we were summoned like errand boys, assumed to have no educational views, editorial abilities or traditions, but lots of money--and told to peddle these brilliant programs.

This style has probably changed in recent years, but the memory lingers on. Unless a better relationship is established in which the publishers are asked to the dinner as well as the show, I doubt if the best "dissemination" instrument available will be made effective."

- Actual products themselves often not demonstrably better than the range of commercially-developed materials, and frequently more expensive.
- With certain outstanding exceptions, laboratories perceived by important practitioner groups (superintendents, teachers) as distant, unhelpful, essentially similar to other consulting or contract-seeking entrepreneurs.
- Too strongly wedded to conceptions of educational change through hardware and software; not adequately interested in system-change and change from outside the establishment (even granting the limits of R&D in these areas).
- Without close ties to universities, seen as not equipped to exert academic forms of quality control, nor closely regulated by boards or reviewers, and the result is a very wide range of quality of staffs, coherence of missions, tautness of management, and utility of products.

Some of the most devastating comments about the laboratories came to us from teacher and administrator groups, which is particularly troubling in view of the substantial funds already spent in developing products aimed at helping these two groups.

Nevertheless, despite the criticisms we have weighed, for us the only question about the basic concept of the laboratories is how to make it work well, not whether the laboratories should exist. The need for established, long-term, R&D institutions still impresses us. And we believe that a good many of the complaints about the quality or orientation of the remaining labs must be laid directly at the door of the Federal government. The Federal government created the institutions to meet certain needs, and if the needs are not being met as well as they might, it seems plausible to us to examine the Federal government's leadership and management, rather than to reject the concept of the laboratory structure.

However, saying we believe the need still exists, and that the original concept of distinct organizations to meet it is sound. we must hasten to add that at present the concept is out of control and being implemented in unsatisfactory ways, and that there are still too many institutions (given the shortage of quality R&D personnel) to insure the uniformly high quality of work originally hoped for.

Furthermore, because the federal government's education R&D expenditures have not risen as many hoped, and because it is important to invest in a variety of approaches to education R&D and to consider the proper proportion of funds that should go to any particular set of performers, we come to the conclusion that the laboratory program must be limited to allow reasonable support for the activities of other important agencies.

In thus reconsidering the concept of the laboratory and how to move deliberately from the present situation to the future, we have in mind certain principles which we think should characterize the capacity of the "new" national laboratories which we expect to emerge in the next few years as one key part of the R&D system.

First, there should be a small number of very high quality institutions, perhaps no more than a half dozen. Though we later present some budget considerations, these are not controlling. We think there are only so many top-flight staff available for such places, which sets a limit on the number that should be supported, and we also believe that other institutional arrangements deserve attention beyond the one we are considering here.

Second, each institution should center on a mission, closely related to a priority of the major sponsoring agency, the National Institute of Education. The work of the organization would be to take ideas from their inception through their development, refinement, and testing where appropriate, to dissemination. The substance to be worked on could range from classroom instruction to systems of school finance.

Third, the organizations' funding must meet several standards. It must be stable (three to five years), it must chiefly come from one source (the NIE), it must be clearly tied to specific work agreed upon in advance, and it must be of a magnitude of $3 to $4 million per year at least. We believe that quality work on complex problems requires a clear sense of mission, relative freedom from the distraction of searching for funds, and the assembling of a sizable team of people that can work together over time.

Fourth, the organization must be protected from demands to give undue services to local and state agencies unrelated to the major R&D mission. Any tie, such as to a state legislative committee or local school board, should be in the service of working out an idea of wide applicability, as a way of improving the national R&D product. Thus individual organizations might or might not be working with agencies near them. Testing, for instance, could be going on in a distant state. We believe such ties to the field at all stages of inquiry are essential for the laboratories' purposes, but we are cautioning against seeing a small number of national laboratories as places where practitioners might go and expect advice on education problems generally.

Fifth, it should be clear that the unusual guarantee of continued funding will bring with it a need for an unusual degree of monitoring and review of the work. Much more than at present, an organization which wishes the kind of stability we have outlined here must expect close review of policy and management by the sponsoring Federal agency, NIE. The special relationship of insulation from repeated competitions for short term funding makes other forms of quality control on the substantive work especially important. The relationship of policy boards to their institutions may need reexamination and change as the Federal role and mission become more significant in the renewed laboratories.

Sixth, the pursuit of other funds by the organization should be subject to review and perhaps limitation, in order to insure the focus on the major goals of the chief sponsoring agency, NIE. Additional funds which support activities closely related to the main mission would be welcome, but active search for other types of funds would raise questions about the commitment to the major mission.[1]

Seventh, the redesigned laboratories would no longer be designated "regional," though we do feel they should be located in different parts of the country. So long as they expect substantial Federal support in an era of very tight Federal R&D dollars, they must be working on parts of the national R&D agenda, as set through a national process. The institutions would, of course, contribute to that planning process, through their knowledge of local issues, but they would not be expected to independently address local problems through R&D.

Eighth, lastly, we are concerned that as such strong and unique institutions mature further, they maintain a prime commitment to effecting change and improvement in schools. Their closeness to the government, and their somewhat detached R&D work may reduce the vividness of the daily life of students and teachers in classrooms. We heard too much criticism on this score concerning the present laboratories and centers, and we note the unfulfilled aspects of Halperin's list of original hopes--close ties to teacher training, maintenance of experimental schools, and constant attention to have R&D impact pressing needs of students and teachers. No amount of sophistication in the R&D work can compensate for irrelevance to the world of educational practice, and the renewed laboratories should not forget this. Even such small details as the lavishness of facilities and the size of salaries may set a tone of separateness that can be harmful.

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[1] We do not rule out such funds, and we are aware of the Commission on Government Procurement view that institutions such as we are proposing should not receive all funds from a single agency. (Report of the Commission, Volume 2, p. 18; Washington, D.C.: 1972). Nevertheless, we feel strongly about the need for consistency and goal orientation of funds, and outside review may be needed to maintain that.

The difference should be clear between these aspects of our concept of the national laboratories of the future, and either the earlier U.S. Office of Education notion of supporting independent institutions which set their own agenda, or the current NIE concept of purchasing discrete products from an undifferentiated set of institutions.

Because of the relatively small capacity in the education R&D system generally and the continuing need for substantial long-term attack on educational issues by R&D professionals, we see no alternative to the deliberate use--and reshaping where necessary, as we have argued--of capacity built up over almost a decade. What should happen in the laboratories is that they must be given a sense of direction. They should be staffed, organized, and operated in a way that meets the program priorities of the major funding source. We do not mean to imply that the national laboratory is the only mode of R&D effort, and we turn in a moment to discussing the need in the next few years of strengthening the capacity of other persons and institutions to do R&D.

The notion we have of the new or revised institution is rather clear to us, and we do not wish to be misunderstood on several key points:

° We do not expect many current university centers to desire the expanded funds and special relationship to NIE that we propose, nor do we think that universities could actively involve only their best faculty in programs of R&D at the $3 - $4 million level. Thus, while we encourage a review of current centers on the chance that some might seek such a relationship, we do not think a negative decision on that score should rule out other kinds of ties and support for university work and training, such as we have spelled out above. Many other Federal agencies maintain centers of research at universities on a scale larger than the individual project, without creating the relationship we have spelled out for great national laboratories.

° The renewed laboratories, whether drawn from present centers or laboratories, should indeed span all functions from research to contact with ultimate users; such a vertical integration is one reason for their expanded funding. We do not mean, by using the term "laboratory" which has connoted an institution chiefly expected to concentrate on product development, that this function should predominate in the renewed laboratories. (See our comments later on the whole concept of development and how it should be expanded.)

- Nor do we expect the national laboratories to isolate themselves from contact with, and assistance to, the education system. Good R&D requires a constant interplay of action and theory, mediated by a process of design to translate theory into concrete systems, behaviors, and products. Effective dissemination, adaptation, and utilization of R&D outcomes will of course require laboratories to be in touch with the ultimate users, as well as with linking agents who are helping users find relevant R&D. We do not think, however, that good R&D flourishes in an environment where for example, sheer survival of a laboratory requires taking on a dozen small field evaluation projects for local schools which are of little interest or stimulation to either party, or the performance of training in a field far removed from the laboratory's mission.

We do not imagine that all current laboratories or R&D centers are doing the best job that can be conceived; but we feel strongly that one builds on what exists; and one moves to strengthen that base towards the goals of greater quality of work, relvance to the missions of the sponsoring agency, and aid to the operating system. Casting the present resource loose into an increasingly stormy sea of competition for small or short term grants seems far from a deliberate use of the present set of institutions, which represent such a cost in trial-and-error learning already. We will return to the specific issues of how these capacities at the laboratories have been dealt with by NIE, and how our eight-point concept of laboratories just described could become the basis for new NIE policies, in the last two chapters.

Local School Systems and State Education Agencies. It is a common observation that the operating educational agencies invest little in research and development, at least as that activity is narrowly defined. The 1975 Databook offers little information on the subject, quoting some tenuous guesses. An earlier paper by NIE titled Building Capacity for Renewal and Reform described a telephone survey of large-city districts which turned up only a small fraction of one per cent of any budget devoted to such activity.

Yet there is more than that happening, and we feel NIE must somehow build upon the present effort. For instance:

- Many states have established planning and evaluation offices using funds from Title V of the Elementary and Secondary Education Act (ESEA).

- State and district accountability schemes involving the analysis of tests and other data are multiplying.

- States conduct evaluations of Federal programs such as

Titles I and III of ESEA.

- Some city districts have substantial research and planning offices, with sophisticated data systems, curriculum development projects, and internal dissemination efforts.

- City and state agencies are involved with a variety of outside helping organizations for research, surveys, staff training, organizational development, and evaluation.

We are concerned about two linked aspects of this situation. Since little is known about the R&D activity in such agencies, little thought is given to strengthening their ability to perform it. As a result, there is continued the traditional image of the practitioner and the operating system generally as the recipient of disseminated information, produced elsewhere for their benefit. While this is being modified slowly, as developers recognize the need for local adaptation of even the finest tested products. there still needs to be a fundamental recognition of the latent capacity for systematic thinking that exists in many systems.

Given the meager resources for educational inquiry and program development, it would be an unfortunate waste to write off the present scattered and sometimes unsystematic efforts of state and local agencies. Of course there are a dozen barriers, such as lack of skill or bias towards the status quo, that might interfere with the ability of public school agencies to look closely at themselves and take remedial action--negative responses in some places to the Coleman survey, the National Assessment Program, the voucher experiment, and other potentially revealing or provocative R&D efforts make that clear.[1]

[1] As we noted in a parallel argument under the discussion of staffing for R&D above, it can be said that a present condition of little investment by school systems in R&D, or even in program evaluation as a first step towards systematic inquiry, accurately reflects the incentives and rewards for such work. While we agree that there never will be incentive for a single system to do basic studies in children's learning, we believe that other kinds of localized program development and assessment activities are useful and proper, and that many systems are working in this area. The Federal role is to support good examples, study the conditions of their success, and subsidize new versions to refine the analysis. As with the argument under personnel, we do not think the concept of school, district, and state-level inquiry has been adequately tested. For a pessimistic argument, but no data, about the potential of such a test, see John Pincus, Incentives for Innovation in the Public Schools (Santa Monica, California: RAND Corporation, 1973. Publication P-4946.)

Nevertheless, we will return in our recommendations to some concrete ways in which Federal R&D policy at NIE could begin to engage the incipient capacity in local and state education agencies, both to encourage them directly and to sensitize other grantees and contractors to the need for close work with them. Particularly if we are encouraging a more specialized (less service-oriented) set of institutional capacities in universities and national laboratories, we must strengthen the local capacity to do for itself what others may no longer be doing for it. Finally, on this topic, we want to recognize that some local school districts have built up admirable arrangements to study their own problems and design solutions. NIE needs to become better informed about these and to encourage such activities wherever they can take root.

System Qualities

As a final aspect of the present resources for education R&D, we want to comment on the degree of "system" that seems to exist. We have been impressed, even though we have far too little data, to find so little interrelation of parts. There is an aggregate of individuals, institutions, and other resources that combine and relate in a variety of ways to a variety of ends. Such an observation strengthens our view that a single Federal agency, with limited funds, must not be expected to have massive impact on such a "system" in the short run. But it also reinforces our conviction that considerably greater effort must be put into mapping the pieces of the universe, understanding the diverse structures and their internal strengths, so that deliberate policy toward each part can be attempted, and so that potential connections and interrelations can be encouraged.

In this connection we note papers on the R&D system by Ronald Corwin, by Egon Guba and David Clark, and a thoughtful letter sent us by Ward Mason of the NIE staff.[1] Corwin describes education research as a "loosely-knit social system" made up of "disparate and nebulous communities" of which many are now in an "anomic state." Noting that "science tends to be rather disorganized," Corwin recounts the history of research management and concludes that attempts to impose more rigid forms of organization have not clearly improved the quality of the product.

Guba and Clark join Corwin in both describing the fragmented system and analyzing how poorly past policy reflects the "reality." They suggest an alternative framework to the notion they feel has reigned unexamined in recent years, of a mechanistic system of specialized institutions in research, development, dissemination, in orderly sequence. They urge that future policy planning take into account a number of currently overlooked aspects of the reality of the R&D system:

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[1] Ronald G. Corwin, "Beyond Bureaucracy in Educational Research Management," AERA Division G newsletter, "The Generator," Winter 1975; Egon G. Guba and David L. Clark, "The Configurational Perspective: A View of Educational Knowledge Production and Utilization" (Washington, D.C.: Council for Educational Development and Research, 1974).

- Knowledge-production and utilization is a secondary goal for most institutions in the system, and as a result the more basic missions of each place will not be dropped or altered in favor of more systematized R&D or other externally-imposed goals.
- No institution likes to be placed at the receiving end of a system--or at the bottom of a prestige hierarchy--as local schools are in the traditional system model.
- Institutions typically refuse to remain specialized, and will expand to take on related functions, thus blurring any permanent distinctions intended by the central planners.

Mason adds that wide diversity of approach is inevitably to be found in a field like education which lacks accepted "paradigms" or models of what is important to study and how to do it.

These points seems excellent advances toward a description of the aggregate of people and places doing education R&D, though we disagree with these authors in drawing normative policy conclusions from the analyses. (For instance, we do not concur that the proper NIE response to fragmentation of the R&D community is to delegate much of its own decision-making to that community.) The important point to be made here is that the system--no matter how one comes eventually to characterize it, as community, organic body, machine, or whatever--is not well-known at present. The sketchy data available on it can support a number of interpretations. Informed choice among the various instruments of policy, from laissez-faire, encouragement of colleagueship and networking, to central planning and direction, across the various domains and types of R&D work, must be based on far better understanding than exists.

For additional discussion of the nature of the R&D system, and the needs it should be designed to serve, see the paper prepared by Sam Sieber of our group, which appears in Appendix A.

Having said some things about the resources as we see them now and how they might develop in the future, we must come to consideration of the role to be played by the National Institute of Education. In the next two sections we take up the present context of forces acting on NIE, and the policy directions being selected.

IV THE CONTEXT FOR POLICY-MAKING AT NIE

General expectations for an activity like R&D, and a set of available resources such as we reviewed in the previous section, are two ingredients for R&D policy. But at a specific time, policy choices must be made within a confining context of forces at that moment. Our review of funding policies at the National Institute of Education was called for at a particular time, because of particular pressures, and we felt the need to inform ourselves about the present environment of NIE. Thus in the section which follows we touch on organized groups, Congress, NIE staff, the National Council on Education Research, other parts of the executive branch of the government, and finally a force from the past--the weight of inherited commitments and staff that the new agency had to carry from the outset.

Alternatively, the discussion could be approached through certain issues or questions to which the Institute must have practical answers and which are the focus of debate and concern by groups and individuals, within and outside the agency. These include: What should be the goals of NIE? Who should participate in decisions on what to do? At what points and with how much relative influence? Who should perform the Institute's work? What methods are best for doing that work, according to what criteria? Who should benefit from the work? By what standard should "benefit" be discerned? How should staff be arranged internally to manage the goals selected?

These matters have been in dispute almost from the moment the ink was dry on the authorizing legislation. For some time the basic policy-making machinery of the National Council was not ready, yet the staff needed to make decisions. A self-appointed private watch-dog group threatened lawsuits over allegedly illegal policy-making procedures within months, and the new Director had to try to defend himself and the administration in early oversight hearings before the House authorizing committee. As various parts of the NIE program have emerged in later months, a variety of others have begun a steady volume of complaint that they had not been consulted and should have been, or that the proposed directions were hopeless in any case. Staff, recruited from academia or other Federal agencies, may have hoped to revive in the fresh and youthful agency the spirit of educational change--now flagging-- that had characterized earlier administrations. They were no doubt impatient with lengthy and participatory planning processes. The fluidity of the early years had the result that hardly an educational journal or professional newsletter has not had at least a few "look-at-the-mess-at-NIE" articles. A vicious cycle of criticism, budget cuts, demoralized and lackluster performance, and still more criticism has only recently abated.

We review some of the actors and forces in the drama, as we see them today.

Organized Groups and Associations

NIE is relearning the lessons of the years of work leading up to the legislative victory for basic Federal aid to education in in 1965--that a great many groups and factions must be considered, far beyond an act or agency's immediate beneficiaries, simply because in education politics so many people have their hands on the brakes, or feel that their hand should be on the throttle in preference to others.

Thus NIE has to deal with teachers and their organizations, anxious to be consulted at every step and alert to watch out for radical experiments that might disrupt important parts of their professional world. It must be aware of higher education groups who monitor the balance between support of university scholarship and contracts to non-profits and who wonder why little attention is paid to their own problems of post-secondary schooling. It must at the same time contend with organized non-profits who, in turn, remind NIE of the poor image that practitioners have of university research and of their own responsiveness to government demands for new kinds of evaluation and product development that universities never got into. Chief state school officers--at least their leadership and Washington officials--lost faith in the NIE early on, as a growing role (and growing dollars) promised by the USOE in product dissemination seemed nipped in the bud when the work of the National Center for Educational Communication was transferred to NIE and the states were not immediately brought in as they had been at USOE. The chiefs' Council set up a special committee to keep an eye on NIE, and played the continuing role of skeptic and critic of NIE's budget in the annual deliberations of the Full Funding Committee (setting the lobbying posture of all major educational organizations on appropriations) based on their view of NIE's lack of responsiveness to states.

For their part, scholarly associations in sociology, psychology, and other disciplines whose hopes were raised by a first-year discipline-oriented and field-initiated research-grant competition at NIE, grew concerned when the following year's competition was much more directed, and when no further field-initiated competitions were held. As available funds went to existing development activities or directed requests-for-proposals, university scholars no doubt saw these as excessively practical activities. The educational researchers themselves have been in a longstanding quandary about how much of an activist role to play in Washington, thus presenting no united front to the NIE.

Thus the various organized groups differ in their notions of what is proper to be studied, how best to help improve education in the first place, who the proper performers are, and in short--about almost every key aspect of an Institute's life. A rising appropriation might have permitted successive approximations to each group's expectations, but that has not been the reality, and to the extent the debate is over money, the groups now must fight over a static budget, where someone's increase is someone else's loss.

The strongest organized voice in the environment at present is the consortium consisting of most regional educational laboratories and research and development centers (CEDaR, for the Council on Educational Development and Research). The lobbying position of these institutions is that their unique historical status as Federally-initiated R&D performers, and their present usefulness to the world of education, argue for a major continuing NIE commitment to them. In anticipation of continuing decreases in their share of NIE funds, the group has lobbied vigorously in Congress and with the other associations for explicit legislative direction to be given to NIE to continue their work. Pressure on the House of Representatives resulted in a direct earmark of NIE's fiscal 1976 appropriation for the laboratories and centers, but even greater pressure on the Senate resulted in less restrictive language. And, in the service of their undenied self-interest, this group of institutions has been almost single-handedly telling the story of education R&D on Capitol Hill.

It is fair to say that because of the important political advantage of the laboratories' and centers' geographical diversity, the present size of their budgets (which makes them significant installations in any Congressional district), and the sheer persistence of their campaign on all fronts, the CEDaR group members have been the single most important continuing pressure on policy at NIE. They work with Congress, with the Council, with staff, and have written and called us a number of times outside our scheduled meetings. As we understand it, and to simplify, laboratories typically claim that their products have been carefully tested and enjoy wide appeal. Research centers argue that critical masses of diverse researchers have been brought together for mission-oriented research over periods of time that would never have been possible under individual grants and contracts--as was the intent.

Both argue that the Institute has a Congressional mandate to build an R&D system, and that the USOE began that task with the creation of the labs and centers, with promises of continuing support. It follows, they would say, that a clear way for NIE to carry out the mandate is by continuing the existing units as keystones of a system. Labs add the political note that continued funding of their development efforts will in turn rebound to the Institute's political benefit as consumers see more and more products as fruits of the R&D dollars. Thus as education needs products and labs make products (better than others), that activity should continue at a high level of support. Needless to say, these propositions are not supported in all quarters.

The Congress

NIE was created in the House, added to a bill (the Education Amendments of 1972) fundamentally concerned with creating the new structure of Federal aid to students in higher education--a bill most controversial for its anti-busing riders. Despite the fact that the need for a national institute of education had been advocated by a governmental task force and numerous individuals, with these other issues claiming significant Congressional attention, the NIE emerged from the legislative process with few backers and friends, and without much direction beyond the enormous hopes of the statutory language and accompanying reports. This substantive ambiguity, and the huge authorization ($550 million over three years) probably fueled the hopes, which may have to be damped somewhat, for something for everyone and for rapid improvements in schooling directly attributable to NIE efforts. Sophisticated statements from a Daniel Patrick Moynihan about the need for decades of effort in basic studies before any payoff were buried in the testimony, not vividly kept before the members at passage or since.

So without widespread Congressional commitment or understanding of a mission, but with potentially enormous expectations and a shrinking base of Federal education dollars to bid for, the NIE has run the Congressional appropriations gauntlet, and that story is by now legend. The budget has been in trouble ever since some unhappy early encounters between NIE's first Director and key Members of Congress. From a first-year "honeymoon" spending level of $142.6 million, the President's budget request for NIE shot up to $188 million in 1974, but a bare $75.7 million was granted. The amount dropped even further, to $70 million in the third year, 1975, against a request of $134 million. Even then, the result was a cliffhanger, as the Senate voted "zero dollars" and the House reduced its own Appropriations Committee recommendation from $100 to $80 million after passionate floor speeches against research by Edith Green and H.R. Gross. As confidence in the agency diminished, report language has begun to give direction to NIE, culminating in the present deliberations over the 1976 budget, where close to one half the budget was earmarked by the House, as the price of granting the modest $80 million budget requested.

Though there have been no oversight reviews by the authorizing committees since the early probing about the National Council appointment delays, the appropriations committees have commented on the substance of the program while cutting budget requests. Questions at the hearings and the committee reports indicate a general skepticism about the work under way, its practicality and utility to "those on the firing line," and a strong concern for more dissemination of what is already known. Criticism has been voiced, more in private, about the incomprehensibility of witnesses, documents, and programs themselves, though in recent months that has been reversed and the Institute has for the first time been praised for its increased "goal orientation" and an understandable program structure. This history of criticism and pressure on the budget by Congress had severe impact on the agency and has led to reducing the political risks taken at every possible point.

The relation of the Institute to Congress includes several other elements that may be worth adding for a complete picture of forces exerted:

- Some individual Members give strong hints about their interest in seeing certain projects continued, independent of their potential for research.
- Some Members and staff on Capitol Hill simply wish that NIE would just clean up its public act, so that clamorous lobbyists would go away. Several on Capitol Hill have told us, "Why can't NIE just arrange some kind of truce among these different groups? We're tired of getting calls and mail on this; NIE has to solve its own problems."
- The Institute has been directed to carry out certain studies by Act of Congress. These include a study of crime in the schools and a more extensive review of compensatory education.
- Some of those most closely connected to the original design still hope that NIE can live up to its mission for superior quality research, done by the most able people available, drawn from the widest range of fields such as neurophysiology and nutrition.
- Finally, we understand that there is in the background some continuing interest, in the Senate especially, in another reorganization of the whole education segment of the Department of HEW, including the Assistant Secretary, National Center for Educational Statistics, Office of Education, and the rest. Public witnesses at recent NIE reauthorization hearings made suggestions of this sort also.

Congressmen typically hear from their chief state school officers, local superintendents, and teachers' groups, all more or less tied to present educational practice and immersed in today's educational problem—from school discipline to school finance. With limited time or incentive to explore the complexities of the role of social research in restructuring the way problems are framed, it is not unreasonable for Congressmen to expect to see the NIE trying to solve pressing problems of education as they are perceived back home. The inability of the NIE to communicate with key education organizations in the early years, to involve organizations in a continuing way in planning, and to articulate a program to educators in terms that sounded reasonable, all contributed to the perception of Congress--held perhaps until recently--that "no one back home cares whether this Institute lives or dies."

In addition to these more typical kinds of legislative-executive relations, Congress is playing another more direct role for NIE. As the Institute seeks authoritative statements on which to build priorities and programs, other acts of Congress are assuming new importance. For instance, the Special Projects Section of the 1974 ESEA renewal mentioned a number of particular areas of education that needed attention; likewise the Congressional charter for a 1977 White House Conference on Education mentions specific items of substance. These kinds of Congressional statements are now being taken as indications of "national priorities" which should play a part in NIE planning for R&D. So, in a general move to be responsive, the NIE is taking on the substantive agenda of successive Congressional education enactments.

Beyond specific NIE matters altogether, it is clear that the Congressional climate of the day or term is an important factor. Senator William Proxmire's attack on social research at NSF, the recent demand that NSF stop its involvement with certain curriculum projects which some parents and Members find offensive to traditional values, the further legislation requiring NSF to submit for Congressional approval in advance all grant actions, and so on, together form a climate that is bound to have a chilling effect on an agency doing similar work.

The NIE Staff

It would be most unwise simply to catalogue external forces pressing on Institute policy, as many important decisions and plans are in fact in the hands of staff, and their own values and concerns are therefore weighty.

As a rule, the staff is younger rather than older; drawn from universities or government rather than public education, critical of much current educational practice rather than satisfied; anxious to get on with their own work and plans rather than perfect the plans of others (either plans made in the past, as in the case of inheritances, or plans made now by outsiders); and divided about the proper mode of attack on education matters (through basic studies of underlying processes, through field-based experiments and development, or through the spread of current best practice and findings). Many feel they were promised certain scope or freedom of initiative when they were recruited in the first heady days, and some would say the promise has never been delivered.

Enthusiasms abound, but managerial talent and planning skill to carry them out is varied--as it is anywhere--so that not all staff feel well-organized and well-used. It is not surprising that the

Civil Service Commission has found flaws in the loose structure of the Institute and the frequent shifting of people from task to task--which are at variance with accepted government organization and personnel principles. The result will be a more traditional organization and hierarchy of groups, branches, sections, and divisions, which will be at odds probably with such staff values as flexibility and which many who are new to government will find inhibiting and contrary to initial expectations.

A former key NIE planner has stressed to us the combined effects of youth, desire to make a mark, and inexperience at planning and managing. As a result, the first several years saw a series of struggles among camps, each somewhat unreflective and not well-tied to outside advice and agenda-setting, but firm in the interest of pursuing a chosen tack--whether close studies of basic processes, or more practitioner-oriented work. The Institute's fledgling Office of Planning and Management understandably found it hard to bring these contentious parties to the table, and to consider in a mature and constructive way diverse and sometimes conflicting efforts, though this pattern has been changing during the term of the Acting Director and with prodding from the Council.

Thus, in the catalogue of forces, it is important to note that staff just as much as outside groups differ on what is best to study, with what methods, by whom, for whose immediate or future benefit. Staff differ, too, in their self-perception. Some wish to be "catalysts" or synthesizers, bringing together the best minds of the research world, drawing an agenda from them and proceeding with those parts of the agenda that funds and the state-of-the-art allow. Some others, perhaps still in hopes of recreating the type of activity they knew at the Office of Economic Opportunity, place more hope in directed work, field experiments, and close evaluation designed by the Institute to yield desired knowledge and fill information gaps for policy-makers. Still others are pleased to apply their skill in answering questions set by Congress in mandated studies such as on compensatory education or crime in the schools.

The National Council

Appointed late, amid Congressional criticism of the Nixon White House for the delay and the resulting difficult position of the Director, the Council has enormous formal powers. With the right not simply to advise, but to make basic policy for the Institute and oversee the program, the Council was seen by Congress as a way to insulate the agency from an untrustworthy bureaucracy and as a balance-wheel in the chaos of fads in education.

Since its swearing-in during July of 1973, the Council has met sixteen times (though not always with a quorum), and has come together in ad-hoc sessions for visits or discussions with other groups many other times. This is a rapid education process, and one could wish that the terms of office were somewhat longer so that the experience gained by Council members would be available longer. And yet, despite this admirable record of meeting and conferring, the Council remains a rather invisible force, certainly not known among NIE staff as a source of policy that affects their lives; nor in the wider R&D or education worlds is it readily acknowledged, we sense, as a shaper of the young Institute.

The Council, we understand, feels that that it cannot, and indeed should not, act without close relationships with the Director, that their proper role is to press for staff analysis of options, honest reports on outside views, and for recommendations from the Director. The suggestion, by CEDaR, that the Council needed its own staff to counter potential biases or special pleading inherent in NIE staff work, was rejected summarily. In fact, the Council has gone on record expressing satisfaction with the present arrangement, in which one NIE staff person gives substantive help to the Council and several others provide logistic support. (Even within the Council's preference not for independent staff work, but for assistance in coordinating the work of NIE staff in policy-development, there seems to us to be fulltime work for several people.)

How has the Council been an influence, then? There have been three ways. First, continuing stress by the Council on its needs for options to review, and continuing pressure for coherent presentations by top staff of how directions were being set, have had strong impact on internal NIE processes. Staff who have no idea what the Council does will nevertheless recall a much more formal and elaborate planning sequence leading up to the 1976 budget, than had ever been seen before. This systematization was in large part a direct response to pressure from the Council.

Second, and contributing to the invisibility even more, is that the Council has influence through a few top staff members who know them most intimately, as these NIE leaders internalize the views of the Council. Thus, without hearing the Council explicitly resolve upon something, a Director or other top official may himself reject a course of action because "I know the Council won't like that," or proceed in a certain way "because it's consistent with Council thinking."

Third, of course, the Council does make substantive decisions, such as setting priorities and reviewing budgets. They opposed expansion of the voucher demonstration activity, for instance. They directed that 10-15% of the budget be allocated to field-initiated basic research. The 1976 budget received extensive scrutiny, and various pressures for and against programs were explicitly weighed and resolved. Yet even here, in the last two years, we are told, there have been times when private Council decisions have been announced publicly as staff recommendations, then endorsed by Council resolution, so the source of policy is not fully clear.

Examples of Council action on R&D funding policies include:

- December 1973: Establishing five priority areas for future emphasis, and allowing the Director to defer to another year some obligations to free up funds for new work in the priority areas.
- January 1974: Making clear they expected NIE staff to solicit public opinion as a normal part of the planning process and to reflect this opinion in material presented to the Council--in contrast to the isolation and non-consultation they perceived.
- September 1974: Obliquely endorsing the direction of diversifying the set of R&D performers, by supporting the Director in trying to bring current work to an end with useful results in the current year (Fiscal 1975) and urging that planning for FY76 give particular attention to helping institutions align themselves with NIE program purchase policies.
- October 1974: In anticipation of Congressional action cutting the FY75 budget, the Council endorsed the idea of reducing lab and center work by 15% overall, based on project-by-project review.
- January 1975: Stressing that policy goals used by the Council in reviewing the 1976 budget also be used in 1977 plans--including targeting funds to state and local agencies, stress on competitive processes, public involvement in planning, and programs responsive to specific needs of education.
- May 1975: Directing that the Institute strengthen its emphasis on evaluation of R&D products and the capacity of R&D performing institutions, and asking that the Director return with some plans for action along these lines.

The last example is of particular interest to us, in view of our own strong views concerning ways in which NIE should be more aware of institutional capacity than it has been.

In some other ways in recent months the Council may be organizing for more effective action. We note that it has formalized its staff office, and in addition has set up committees of the Council for specific functions. An Executive Committee will give continuing oversight to NIE implementation of Council policy, and will provide a manageable forum for considering new policy initiatives to be recommended to the full Council. A committee on Program Development and on Strengthening Education R&D can look at the substance of the various NIE activities and consider whether the mix of activity is responsive to continuing education problems. This group, as well as the third, on Council Reports, could be the forums for consideration of the analytic work to be done by the R&D System Analysis unit we later recommend NIE should establish.

Since we argue that the required reports should be seen as important opportunities to tell the story of education R&D, we are glad to see the Council formally establishing a group to attend to these tasks.

Regulators Elsewhere in the Executive Branch

The forces we have been talking about have impact on both procedure and substance, such as the Council in effect directing both the process and nature of plans by the questions it asks. There is in addition a set of forces acting on purely the procedural conduct of NIE business which concerns many staff, and may be worth commenting upon briefly.

Outsiders to government often suspect the "interference" of the Office of Management and Budget (OMB), the planning and analysis office chiefly concerned with the President's annual budget. The agency has grown in recent years to have oversight of many more aspects of government activity than the budget, in the name of coordination. Typically, however, OMB has not intervened in the Institute budget process as it was famed for doing in earlier years of the 1970s in cutting other social programs; NIE is seen as an administration initiative, though not to justify an enormous battle with the Congress. The "forms clearance" procedure, carrying out the requirements of the Federal Reports Act that all data-gathering instruments be screened by OMB, is often decried by researchers as potential government censorship, but in fact seems not to be so exploited by OMB.

Rules and regulations concerning employment, advancement, and organization of staff are made by the Department of HEW and the Civil Service Commission, and these, too, are seen by many at NIE as inhibiting and irrelevant. As mentioned above, staff have recently been reorganized, and much more exacting and rigid job descriptions have been ordered for each employee, in the wake of a critical review by the Commission of past personnel policies. Staff perceive that the Commission views all agencies alike, and would staff and organize a check-writing bureau in the Veterans Administration the same way as a research team at NIE--with obvious dysfunctional consequences. Whatever the merits of the argument, the fact remains that NIE's hiring authority for certain positions has been suspended, the Institute has another black eye, and flexibility of action is reduced for the future.

The general political climate of suspicion of education-related and research-related grant and contract procedures, suspicion encouraged for years by now-retired Representative Edith Green, leads many business administrators in the Department of HEW now to interpret procurement regulations in the strictest ways, we are told, with the result for instance, that NIE seems to be virtually precluded from considering unsolicited proposals that are not part of some formal competition. The episode last year of a disgruntled contracts officer from NIE publicly spreading a mixture of fact and fancy about "scandals" in NIE procurement on radio, to Jack Anderson, and anywhere else he could find an ear, with the inevitable resulting General Accounting Office inquiry lasting for months, has had a chilling effect.

It is increasingly difficult to involve groups of outsiders formally in the planning and review of the Institute's program, some feel, just as that becomes a more central tenet of policy. This problem results from a Federal Advisory Committee Act and additional Department policy which lay strict rules on officially-constituted advisory panels, and conflict-of-interest rulings by NIE and Department attorneys which make it very hard for anyone associated with research to declare him- or herself free of possible benefit from the advice to be given.

From the parent Department of HEW itself, including the Secretary, the various staff offices serving him (Planning and Evaluation, Budget, Administration and Management), and the Assistant Secretary for Education who presides over both NIE and USOE, there seems not to have been any remarkable degree of general programmatic regulation or oversight. Again, as an Administration initiative, the NIE has been an object of concern, dismay, solicitude, but no constant or overt meddling (nor grand gestures of pride, pleasure, or support). The Secretary and the Council jousted over expansion of the voucher program, with each finally tacitly agreeing they could veto the other, so a compromise was worked out between the Secretary's eagerness and the Council's reluctance, to fund some further planning. But aside from that particular episode, however upset the Department may have felt at either the substance of the NIE's work, or its political ineptness, little action has ensued. We do conclude that the new Institute has needed flexibility to operate in areas such as procurement, which has not always been understood or sympathized with at the Department level. And we urge that for both that purpose and for others, the ties between the Secretary's office and the NIE be examined and strengthened. Strong support will especially be needed from that quarter if the lab-center review process we have in mind is to be successfully implemented.

The Effect of Past Actions as Determinants of Present Possibilities

A final feature of the context that we must note is the crushing history of inherited commitments that we hear about repeatedly from NIE staff. The Institute, they wish us to recall, did not start fresh, and was not able to build its program as it chose. It was "given" a great many staff and programs from USOE, OEO, and perhaps even elsewhere, despite the Congressional intention that NIE avoid many past mistakes of research management. Yet the early budgets were entirely filled up with such items, contractual commitments that had to be honored, of enormously varied quality and purpose, though to be sure the Institute had signed many of the contracts itself.

Thus, in the first few years, goals could not be set a priori, performers could not be chosen against goals, nor new constituencies be imagined; all came with the territory--projects, project monitors, implicit and explicit goals, performers of R&D and constituencies who believed in the activities.

If appropriations had risen as everyone expected, the inherited work would not have bulked so large. But the Institute's powers of persuasion did not match its appetite, and under a steady budget the weight of the past has been felt more and more. And, of course, one cannot build new constituencies when almost all funds are tenaciously being retained by old constituencies. The mood must have been schizophrenic in the first years, as NIE was expected to quickly demonstrate new directions and plans, but was also asked first to "show what you have accomplished with your present funds."

We can understand, too, the sense of fairness which may have been felt to prohibit differentiated dealings with laboratories and centers in the early years. Three-year contracts had been signed in many cases for specific programs. To change course in mid-stream to a more institutional relationship with some, even as several NIE programs might have wanted, was seen as impossible because of the general commitments made to a program-purchase policy. Even so, this history hardly explains why there should be such dearth of policy thinging about the institutions now, at the end of the three-year commitments.

Conclusion

From groups, Congress, staff, and past commitments, then, the NIE has available not so much a mandate but a contradictory (and often mutually exclusive) set of directives as to basic goals, means to attack them both of method and performer, rights to participate in the process, and expectations for the eventual result against which to measure achievement. And from the standpoint of basic resources, Institute managers have scrambled to preserve some internal freedom to initiate in the face of heavy aggregate inheritances and heavy outside pressure to constrain the budget through earmarks.

In this context, the one basic and fundamental dilemma of research managers that we do not envy is resolving the competing pressures for scientific activity vs. constituency-building. Since the political muscle of the organized basic science community--those for whose support and nurture the Institute was in part created--is tiny, the alternatives are closer ties to the concerns of the service-delivery system and its powerful constituent associations, and/or the organized R&D institutions in groups such as CEDaR. Both such moves have definite consequences for the range of acceptable activities the Institute can support. If the burden of making up a politically viable program each year seems too impossible under this set of mutually exclusive pressures, it may become more and more attractive to think of funding research through "set-asides" or permanent legislatively-earmarked fractions of the funds appropriated for educational service programs. For instance, research on compensatory education could be funded handsomely with a fraction of a per cent of the appropriation for Title I of ESEA. Of course, pressures would still be brought to bear on actual spending decisions made by the agency, but at least the basic annual funds might be less vulnerable and problematic. The constraint in this case would be that the Institute's activities would be much more closely tied to the substance of legislative enactments of the Congress.

Within this set of forces, then, NIE is taking certain policy directions in its Fiscal 1976 budget, and in the 1977 plans now in process. These directions include focus on various tasks or problems, to be done in various ways by various personnel, and procured in various fashions. We turn next to the R&D funding policies that are our major focus of assessment, analysis, and recommendation.

V POLICY DIRECTIONS AT NIE

This consultant group was convened out of concern at NIE to have an outside look at its policies towards a set of institutions--the regional laboratories and the R&D centers. In our view, the direction for such institutions should result from two sets of analyses and policies: on the one hand, general NIE program planning and design--choosing substance to work on and making further choices as to strategy; and on the other hand, close understanding of the various resources available to carry out the kinds of work implied by the planning process. With these two kinds of information well in hand, policies of procurement can be tailored to fit the state of the community of performers who might be capable of doing the job, and subsequent policies of management can similarly be fashioned depending on the work and the worker. General issues at the level of "for or against institutional support," or "loose or tight monitoring," must be raised in more concrete contexts.

The following discussion focuses first on the current Institute policies of program design, planning, and substance. Then we review the ways that resources seem to be found and linked up with the Institute's program. Third, we discuss specifics of the funding policies toward laboratories and R&D centers. We conclude this section with a discussion of a new role NIE should take on, of understanding, analyzing, and giving leadership to the whole R&D system in education.

We should say at the outset of this review of NIE policies that, as noted in the preface, we emerge from our work stronger supporters of the NIE concept than we were at the start. We believe in the idea of such a lead agency, and we appreciate the efforts of staff, grantees, contractors, and outside groups to keep the agency going in the first three years. However we do not accept or support NIE completely as it is, and we see a number of essential changes in policy, practice, and general outlook that must take place for NIE to fulfill its promise.

We, probably along with many other distant observers, had been aware before taking this assignment mostly of the bad news, the poor publicity the NIE had been receiving in almost every quarter. Yet with the opportunity both to look more closely at some of the complaints, and to learn a great deal more about the Institute's staff and directions, we find much in the recent months to feel positive about.

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* Begun by the Acting Director and continued in the

recent weeks by the new Director, a serious and sincere effort to strengthen relations with various constituencies, Congress, the teaching profession, state departments of education, and others.

- Greatly improved responsiveness to Congressional intent, in the presentation of the Institute's program and in carrying out mandated studies.

- Serious strategic thinking done in preparing the Fiscal 1976 budget, with hard choices made and priorities set.

- Revision of the agency structure to emphasize substantive areas of work, rather than functions such as research or program development which have little meaning to the general public.

- Establishment of new committees by the Council for more extensive work, and an Executive Committee for further work between meetings of the whole.

- Opening of NIE planning and policy-making more and more to the scrutiny of outsiders, such as with our own group, or the group which spent two days reviewing tentative program plans for Fiscal 1977.

- An increase in internal communications through newsletters, more frequent colloquia, seminars, presentations by guests, and other means, to reduce the isolation of programs from each other and rebuild a spirit of productivity among staff.

- Clarifying to some extent internal planning and decision-making processes.

Some complaints from the field seem sometimes to take little note of these things. We have occasionally felt we were hearing anecdotes from the first year or so of the agency, told and re-told without charity, historical perspective, or recognition of the present shifts.

Planning and program design

There are three policies of this sort that we turn to first, as they result in the substance toward which funds are directed. They are: defining the agency's purpose in terms of work on six specific education problem areas; involving a wider range of groups, individuals, and organizations in setting the agency's agenda; and better balancing of the actual activities supported, between payoffs in the long, medium, and short run. We take them up in order.

Problem focus. In part reflecting "priorities" identified in 1973 but not emphasized in budgeting before FY76, the six problem areas chosen as the budget and organization structure in late 1974 are as follows:

- Improving the connections between education and work;
- Finding ways to remove barriers to education caused by racial, language, or sex prejudices or stereotypes; improving the equity of treatment of participants in education generally;
- Improving the capacity of schools, school districts, and community groups to solve their own problems through inquiry and innovation;
- Improving the productivity of education through strengthening financial, management, and technological tools;
- Managing an increasing base of data on research, products, and good practice, in order to disseminate it, and helping states and school districts to gain access to the base and link it to users;
- Strengthening the ability of the schools to teach basic skills.

We support strongly the problem-focus and regard the problems chosen as significant and needing attention. We find such support rather easy, however, since we share the perception found many times over in the field, that the areas are "broad enough to drive a Mack truck through" and can encompass most of the major education issues one could conceive of. (If anything, we would welcome even sharper definitions of NIE targets, based on assessment of areas where the strongest impacts could be made with limited funds.) But it may be very useful to have such foci built in for a while, to be able to answer the endless petitioners for funds for every imaginable scheme that "our appropriation does not cover activity of that (other) sort," and to be able to tell Congress just what the NIE is up to. And as presently-supported institutions wish to know about their future role in the NIE program, it can now be clear that major funds will be spent only on activities within those problem-areas and that no other fields of work can be supported to any substantial degree. In the climate of tight money and demands for clarity now pressed on NIE, we see no alternative to such a policy of focus, no way that NIE could spend major funds, for example, simply according to scientific disciplines (a program in sociology or a program in psychology, for example).

We are concerned about the substance of the chosen areas as well. For it seems to us that the problem-focus of the 1976 budget may not in fact reach key problems. For instance, it is not clear to us what the overall NIE effort will be in the areas of education of the disadvantaged and problems of inner-city schools, either in program content or resources. At least none of the budget materials and analyses that we saw allowed us to piece together from the present problem-focus how activities would relate to these special needs. As another example, we might ask about concentration on certain elements of the educational program in the country, such as the junior and senior high years, which have been the focus of considerable debate at a highly abstract level in recent years but which could be followed up in concrete plans and designs with profit.

In view of our concern about gaps in the coverage of present problem-areas, it seems to us that in developing plans for work within each problem-area, some more formal advisory or intelligence system could be at work to insure that the definition of the problem stays "real" and current with the state of the education system. Perhaps some common "health of education" indicator projects with the National Center for Education Statistics could be mounted to keep an eye on broad trends in each problem area.

We agree with the Council that NIE should not be held accountable for solving each of the problems it identifies for attack--education and work in the present economic situation is a clear case. But we sense that there is no long-range planning process either for changing the mix of activity within a problem-focus, or revising the overall set of problems. Most other agencies have equally, if not more, primitive processes for planning social R&D, so we do not mean to imply some high standard that NIE has uniquely been unable to meet. And indeed, the creative adaptations by several NIE programs of the National Cancer Institute planning process are to be applauded as very useful experiments which deserve study in their own right. However, for the future, and especially above the program level, we sense that there should be an equally creative planning function, beyond that for crisis analyses and annual budget reviews. Perhaps there should be a separate staff of two or three people within the planning office who are well-read and catholic in their interests and contacts, with a few resources to convene people outside of current program areas. Hopefully such a staff could listen closely to users of R&D, to bring back to the NIE not what can be done, but what should be done, when the time comes to reconsider the problem areas for NIE focus.

Broader involvement in setting the agenda. The Institute has a policy of now seeking broad participation in the design of its work, and such a claim is regularly made about the development of the chosen problem areas. But the choice of such broad headings is really only the beginning, and the subsequent steps of choosing sub-priorities and strategies need to be as open in process, and as credible in substantive result, as the first step. We find concern in the field on both counts.

As to process, we heard repeatedly of anger at unmet expectations concerning the openness of planning. Scholars and practitioners, in associations and institutions, told us of promises made and broken, "involvement" that was neither serious nor sustained. A teacher group especially forcefully reminded us that occasional meetings in Washington of high-level staff are no substitute for serious participation of practicing teachers in the work of NIE grantees and contractors from the outset. With all the talk about a new emphasis on outside views at NIE, it was disturbing to hear that any group needed, as these teachers did, to "break down the door" to get to the table at NIE planning conferences of significance to them.

We heard that the problem areas were chosen in part because they covered a significant fraction of the present work NIE has under way. But if this is true, it is further disturbing--again on the subject of the process of planning--to hear as we did repeatedly at laboratories and centers, as well as at other R&D institutions, that top-flight staff at such places with extensive background in relevant work, feel distant and uninvolved in the planning and designing of future work in their areas of competence.

We recognize that people who complain about being uninvolved may in fact be seeking only approval for continuing what they are presently doing, rather than analyzing a situation and entering into a planning process. We recognize the several agenda-setting conferences that NIE has held, with massive participation of many interested groups and individuals. Thus, we cannot judge the factual accuracy of these claims about participation. But even the perception in the field--not confined to the beleaguered labs and centers, though as appropriate for them as anyone else--that NIE is aloof and hostile, will be a continuing problem in constituency-building and drawing on the full capacity of the R&D system for NIE work.

Our own contacts with the NIE staff have shown them to be bright, capable, hardworking, and far from the stereotype of the Federal bureaucratic timeserver. However, we feel that their very articulateness, and their concern to be involved with the work they oversee, may appear overpowering and arrogant. Whatever the shortcomings of research management at USOE, the research field may now look back on those days of laissez-faire as a golden era of non-interference by the government as many new employees at NIE carry out a more directive style of research management, and not always with the research or practitioner credentials to legitimize such a role.

Reducing long-term development commitments. As a third element of planning and program design, we note a policy at NIE aimed at balancing long- and short-range activities more equally in future budgets. NIE argues that the mix of activities has in the past been too heavily weighted by large-scale, long-term contracts for "development" work, chiefly at laboratories and R&D centers. The NIE argues in its 1976 budget materials that program plans reflect a move away from such a concentration, to allow for shorter-term payoff activity in dissemination and in policy-studies for decision-makers who need information soon, and to allow for reinstatement of new basic research awards which were cut off in 1975 when Congress reduced the overall budget.

These new directions may have several positive features--political appeal, substantive merit, and responsiveness to Council policy. But we have reservations about this policy, to the extent we understand it. Either we do not grasp the reasoning against "development" in general, or we do not see distinctions among types. So far as developed products from R&D centers and laboratories chiefly intended for teachers and children, we did not gather new data on quality and impact, nor was NIE's own survey data on products yet available, for us to judge the quality of this type of work. Several of us who pressed staff of labs during visits or in correspondence concerning effectiveness remain unimpressed, and we understand that the National Council shares the general view that contractors have not had funds or other incentives to gather extensive, long-term data on product impact. Yet we liked what we saw at a number of places, where unique and useful materials seemed to be under development and dissemination. A number of our correspondents agreed, and our talks with leaders of the National Education Association, American Association of School Administrators and the American Educational Research Association showed further consensus that some places were doing doing development work of great promise or actual accomplishment.

We recognize that some NIE problem areas will continue to support lengthy development activities of various kinds. And we recognize further that it is quite proper to question the continuing need for large-scale curriculum projects, for the vogue of such efforts has somewhat passed and teachers are often asking for different kinds of help than just through materials and media. Also, publishers have increased their output of diverse and attractive materials, some even as the result of field tests and including built-in objectives and assessment devices, all of which used to be the more exclusive hallmarks of Federally-supported laboratory products.

However, there are other kinds of "development" that seem to us to have good claim on NIE resources, and which should not be overlooked in a rush to get out of an expensive type of activity. We have in mind, for example, development of models of in-service teacher training; system-change development work, such as rethinking compensatory education altogether as NIE has been asked to do by the Congress, but which could have been initiated by NIE if it had not been asked; developing post-elementary school models that incorporate some of the thinking of the past few years about the fallacies of the comprehensive high school; developing alternative concepts such as the employer/experience based career education projects; and developing new decision-making and communications systems between school and community, or between students and administrators. These are just a few examples of education program development, beyond curriculum materials, that seem worth exploring, and we hope that there has been no decision against such projects. We of course understand the need for having work under way that will result in tangible results in the near future as opposed to projects requiring four or five more years.

As a final note on program planning and design, we understand that NIE expects to reinstate a policy of supporting basic research in various problem areas to a total of approximately the Council-mandated 10-15% of the budget. We hope that NIE in so doing will not return completely to the earlier pattern of scattered, uncumulative single-project work by university and college scholars. While some funds should be available for promising scholars who have not managed large projects (or do not wish to), we also feel that investment in longer-term efforts and sizable groups should be encouraged. Under that pattern, social systems can form, the group can grow and develop, adapting its approach as the problem becomes better known, and training some students along the way by apprenticeship. We do not underestimate the difficulty of getting useful research out of groups of university faculty, and as we noted above, the R&D center must be only one among many strategies for attempting this feat. Nor do we place sole reliance on limited studies by a professor and an occasional helper or two. We hope that as NIE seeks "better balance" in the program mix, grants of any size will be made after serious thought as to the state of particular fields and the potential for significant advance through the precise type of award being considered.

Finding and Supporting Those Who Can Best Do NIE's Work

We understand there will be in effect in 1976 a policy to diversify the performers of NIE's R&D activity, with open competition as the strategy for this widening of the net. We agree that there are untapped resources in university departments including education or in the publishing industry and underused resources in local and state education agencies. But we also have concluded that there is not any excess or over-abundance, or even adequacy, of R&D resources, especially not resources of high quality. So we feel it is simply not true that one needs only to advertise the NIE's needs in order to have immediately an array of qualified people or organizations to choose from. We discuss two aspects of linking up with available resources: first, knowing present work, and second, drawbacks to the present style of competition practiced at the Institute.

Hoping to find some new friends, new constituencies for R&D, and hoping also to start fresh projects that could avoid the discredit of the old, it seems likely that NIE staff in its first two years had incentives to view inherited projects and their performers as unimportant, of inescapably lower quality than anything new. Indeed, the presumed shortcomings of the past research establishment had been a chief reason for wanting a new agency. Thus the familiar "not invented here" syndrome may have "justified" not giving inherited work close attention or investment of time in review and management. Recall that budgets were to rise, which meant large plans on the drawing boards, consuming most available staff energy. Some of us heard repeatedly from project officers that "no one had taken a very close look at the work on this project in the first year or two after we got it." Such comments were mirrored in our field visits and questionnaire responses, as managers of work at laboratories and centers recalled their projects being shuffled from office to office, with no project monitor in place long enough to become familiar or effective.

The situation seems to have improved, and these same project officers in most cases had been with their charges for some time, though travel allowances to be with projects in person seemed inadequate for some of the larger efforts. But it troubled us most that individuals clearly were operating in a vacuum about how to work with projects, how closely to be involved, how much they needed to know to carry out what sort of role. Such a situation, of extreme diversity in how much is actually known about specific work in the field, especially at laboratories and centers, makes one skeptical about policy changes that should rest on judgments of present activity.

Our second concern about the way NIE uses its resources is its apparent policy of procurement by contracts awarded after open competition in all but exceptional cases.[1] (We are aware that in the last two years, owing to tight budgets, many procurement actions were simply continuations of grants and contracts awarded at the outset. Nevertheless, the intended policy direction for the future, and for those new funds let out in the recent past seems to us--and to many in the field--to be towards open national competitions, notwithstanding several exceptions such as the Problem-Solving competition that we were told about repeatedly.) This emphasis on competition was recently reinforced in the Senate appropriations report for FY 1976, and was put forward

[1] NIE's own data show a preponderance of funding through contracts. In FY74, 497 contract actions accounted for $47.6 million; 129 grant actions accounted for $14.6 million. Through April 1975, 204 contract actions resulted in award of $44.4 million, while 18 grants had resulted in $5.4 million of awards. The choice of instrument has many interesting and important ramifications that we do not go into here, but which need exploration in the NIE context - including implicit incentives to use contracts because of the 10-15-month delay in issuing regulations for grant awards, even though such awards can be made with much more flexibility of procedure than contracts.

strongly in the Background Paper and in other NIE documents. It may be politically important just now to have a policy like this to counter lingering criticisms of U.S.Office of Education procurement of social research. But we feel it has serious drawbacks, both intrinsically and as presently used, as a tool for any particular deliberate action such as diversifying the performer mix.

As typically executed, the open competition based on an agency's Request for Proposals (RFP) has at least the following problems:

- It is not always true that agency staff can write clear and useful specifications for what is wanted, particularly if the work stems from a planning process where the agenda was drawn up by national experts from outside the Institute.
- The costs of bidding are eventually added to the government's cost in future procurements, so a high rate of bidding and the accompanying high rate of unsuccessful proposals is in the long run drawing funds away from performance of the work. Where there are only a few good performers for a given type of work, the rest of the competitors have little chance, and their costs of failure are a drain on energy and time that might have been avoided. Further, the cost to the government of reviewing a great many proposals is not always reflected in superiority of the final product as compared with the quality obtainable under more limited competition.
- Extensive competition among a small number of organizations capable of large-scale work in education R&D may tend to promote disintegration and professional secrecy within the group--negative results to be avoided if possible.
- Where proposals are judged by Institute staff, the current procedure prevents them from working with proposers to look at ideas or to review advance copies of proposals so as to avoid submission of obviously unresponsive or unqualified ones, or better, to strengthen marginal ones.

Researchers who examined the competitive process in a slightly different field, social program evaluation research, commented how competition failed to produce quality, and in fact quite the contrary.[1]

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[1] A. Biderman and L. Sharp, The Competitive Evaluation Research Industry (Washington, D.C.: Bureau of Social Science Research, 1972), p. 46.

In addition to the above-mentioned barriers to quality, and hidden costs, the strategy of open competitions as a device for bringing to the attention of the NIE all those who should be considered for research funds rests on questionable assumptions about the market. First it is assumed, explicitly in the Background Paper on "Labs and Centers," that there are now abundant resources for education R&D as a result of the heavy demand for social science evaluation and advice in the 1960s. We feel, on the contrary, that this is a misplaced hope, and that a few hundred consulting firms do not an R&D system make. Second, reliance on competitions assumes that those who would be good performers know about the solicitation and are able to enter the market. Some challenges to this assumption, at least based on present NIE practice, must include the following:

- Little or no advance information about specific competitions is available except through personal contacts, which effectively confines participation to those with well-developed private intelligence systems or those already so aggressively in the market as to scan the official Federal procurement publications. Specific competitions open and close on very tight schedules, leaving little time for informal contact to spread the word. The process of advertising contract procurements is especially cumbersome and ill-suited for reaching the academic community.

- Nor does any general information at a decent level of specificity exist concerning the overall thrust and scope of each program, so that a person could review planned activity and inquire further how to participate.

- No single document is available such as a monthly list of present competitions or RFPs available (though we recognize that fewer new competitions were held in the tight budget year of FY 75).

- Mailing lists, we understand, have been a continuing source of difficulty. Apparently the Institute does not have a ready way to identify people who have indicated interest in the past.

- No general information exists about the mechanics of grant and contract application and award procedures, such as a

> general guide to "How to get funds from NIE." Even small basic research projects are announced and awarded through the formidable method of the RFP and the contract, without guidance as to the meaning of the various parts to be completed, the full process that will be followed in making decisions, rights of debriefing, and so forth. The perception is widespread in the field that doing business with NIE is extremely complicated, and it is probably right.

We understand that so inadequate is the Institute's general publications effort, some staff have been reduced to sending out xerox copies of the staff newsletter or the interim telephone directory for lack of anything else timely, comprehensive, and informative.

To be sure there are exceptions, and we have seen isolated plans, concept papers, or documents from programs listing active grants and contracts. And a newspaper-format publication has begun to issue in the last year, though it focusses on isolated projects, not on the Insitute itself, and is not aimed at the R&D community. Even staff members on the Institute's authorizing committees on Capitol Hill shake their heads that a place with such a need of public understanding, and with presumably some expertise in communications and teaching, has such meager ways to inform the professional community with which it must work to carry out its program, let alone educate the broader world about its activity.

In short, we doubt that NIE R&D opportunities are as widely known as they should be, if one is to put confidence in open competition. And when we add in all those who now avoid NIE because of shabby treatment in the past (proposals lost, advice asked at hastily called convention conferences, red tape of grants management), and the others still who would be superb if joined with one or another across the hall or down the street, we begin to add up a large segment that may not be fully engaged by the present process. We are not surprised to hear NIE staff comment after procurements, "We were surprised who bid and who didn't," or "We just didn't get the quality of proposals we hoped for, but we had to go ahead...."

The impression left in the field, which we tend to share, is that reliance on open, national competitions under the procedures now used by the Institute can be in part a rationalization for being ill-informed about present performers and their capacity to continue present work or redirect themselves to new areas and for avoiding the substantial task of identifying and being in touch with the diverse segments of the R&D system that should be brought together to play a part in NIE's work. We recognize the dangers of simply allowing each program manager to award funds non-competitively, and we agree that review processes are useful and necessary. But the costs and inadequacies of the present completely open competitive methods are all too plain as well, so we conclude that procurement management is a prime area for additional staff, research, and innovation.[1] We present a number of recommendations towards that end. We are simply disheartened to see the weak links between the Institute and the community of R&D performers after three years, and the apparent reliance on wasteful mass invitations for proposals to determine who is interested and who should be considered to do NIE's work.

Regional laboratories and R&D centers

Though commonly lumped together in language and policy as "labs and centers," we find them hard to deal with that way, as they share little except the accident of transfer from USOE at the same time and their status as initiatives of the Federal government some years ago. The tables in Appendix C demonstrate their variety of budget size, staff, and degree of dependence on NIE. The narrative data they submitted further underscored the point, as we mentioned in Chapter III above.

Laboratories seem to us a unique structure, poised between the university and the service-delivery system of education for a variety of purposes. Their shortcomings we feel are partly the responsibility of the Federal government for not seeing to it that events proceeded differently, and partly the result of the weak quality of some of their staffs and boards. University-based R&D centers seem to us only one way of organizing university talent, with certain drawbacks, and we favor use of various options as suits the work and the campus.

So how does NIE policy seem likely to affect these organizations? First, what is the policy? Leaving aside the question of how NIE will respond to the conflicting signals from the House and Senate regarding earmarked funds, NIE policy towards laboratories and centers seems to include the following elements:

- Attempt to complete present products and terminate plans for further work by Fall 1975 when many three-year contracts expire.
- Where specific continuations are desired on specific projects, individual program offices will arrange to present sole-source award justifications for Institute review.

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[1] Our own analysis of procurement issues and specific alternatives that should be explored could not be as extensive as we wished. Others have been working in this field, however. We refer to John G. Wirt, et al, R&D Management Methods Used by Federal Agencies (Lexington, Mass.: D.C. Heath, 1975); Volume 2, Part B of the Report of the Commission on Government Procurement (Washington, D.C.: GPO, 1972); and the active research which may be most useful of all, the National Academy of Science "Study Report on Social R&D." This last group is giving particular attention to procurement issues.

- Certain specific competitions may be designed to draw exclusively on laboratory or center expertise, in such activities as dissemination and product installation.
- Some promises are being made about help in finding other funds.
- Encouragement is offered for institutions to enter any other Institute competition in the coming months.

Lab and center heads tell us about deep staff cuts they anticipate, because they are unsure of funds after this Fall. The tables in Appendix C show that labs project 400 of 500 professional staff now supported by NIE will have to be terminated for lack of other funding, and centers report a like figure of 200 out of 426. The questionnaires brought us pathetic examples of the grueling search for other work--including re-norming tests for the Air Force and doing $1500 Title I evaluations. But NIE staff explain that over 20 million dollars were to be spent at labs and centers in the coming year even before the House and Senate directed a greater amount, so that such estimates are not accurate reflections of how the full NIE policy will work out. Still, it seems unreasonable to us that just a few months before such possible serious impacts, labs and centers should lack information about what competitions will be held and when, or what sole-source awards they can expect.

We could not review each institution or program and make specific judgments and recommendations, nor were we asked to do so. Our brief visits showed us places of high energy and appealing products, and others with more mixed report cards. Our correspondents agreed. We ended up feeling that no group of education R&D institutions per se deserves continuing Federal support, owing to the great diversity of work and activity present in the field.

But beyond that, we are simply appalled at the elements of policy that are not in place, the apparent disregard of the history of Federal involvement with the labs and centers, the lack of deliberate review of the total capacity of each institution to ascertain its suitability for a continued role in the NIE program. If, as a general principle, no institution is owed a living, and even if a number of present labs or centers could be closed without serious loss, nevertheless there should be some overall process of reaching decisions that can disrupt institutions and careers. The absence of such a plan of procedure is indefensible historically, substantively, and politically, and we strongly urge the Institute to avoid letting the aggregate of project-by-project decisions rule the final outcome.[1]

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[1] As a general matter, beyond the issue of evaluating lab and center work specifically, we find it surprising that NIE has no general

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We can understand the history which brought things to this point. In 1972, when the new Institute was just starting and laboratories and centers changed their support method from a single contract to a series of project-specific contracts, each with its own timeline, milestones, and responsible government official, a shuffle ensued so that projects at a single lab or center have come to rest in far-dispersed corners of the Institute, subject to the idiosyncrasies of project monitoring that we discussed above. In fact, we discovered at the outset of our inquiry that NIE has no up-to-date information on labs and centers as whole organizations, "since NIE deals only with projects now." The rationale was no doubt convincing in 1972; the agency will grow, funds will be spread around and the laboratories and centers will be a diminishing part of the total group of NIE's R&D performers. In this view, special attention to these few places was not warranted.

But of course the budget did not rise, and the labs and centers have remained a sizeable, if decreasing, fraction of the total Institute budget. And despite the central role of people and projects in such places, the NIE continues to manage their work with apparent indifference to the institutions as entities, and relates to them still through individual project officers except for confrontations at the top level. And with the sudden possibility that has arisen recently that some additional awards to labs and centers may have to be made in response to Congressional requirement, the Institute finds itself scrambling to consider what the places are good for--considering yet again the familiar device of the open competition to substitute for mutual communication and solid knowledge, saying in effect, "You tell us what you think you are good at doing."

So our major impression of policy with respect to labs and centers is that there is none where it counts most--namely in thoroughly canvassing their likely contributions to NIE's work. The result seems

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evaluation group, policy, or support function. Thus each project officer, each new writer of an RFP, each proposal reader, to some degree reinvents the wheel or expresses personal idiosyncrasies, in the absence of central guidance and sustained attention to the topic of criteria and standards of quality. Sam Sieber has some thoughts on this in his essay in Appendix A. We note that such a missing piece of activity, such a gap of intellectual substance, makes it easier for critics of decisions such as not renewing a certain lab or center contract to charge that politics or budgetary constraints are chiefly to blame, rather than to confront the possibility of bad work. It seems odd that NIE has been able to resist taking a sustained look at these issues, in view of the incessant pressure on local schools and other Federal agencies to be involved with evaluation.

likely to be the closing or changing of a number of institutions. While institutions with special relationships should be decreased in number and should have their missions clarified, uncoordinated actions are not the way to do it.

Taking the goal of an institutional capacity such as we outlined in Chapter III, a small number of very high quality national R&D facilities in education, we feel when the set of such institutions is in place, that they ought to consume no more than a third of NIE's budget. If we consider that a decent operating size should be at least $3 to $4 million each, per year, it is plain that NIE can support only a fraction of the present number. A complete review of programs, finance, and management at each institution can result in a considered decision whether a place can contribute to the NIE problem areas and the degree of reorientation needed to do so. Only such a detailed review and holistic judgment can do justice to the Federal investment in building the institutions. We think such a review process should be done soon even if NIE's budget were twice its present size. Where reviews indicate that a place will indeed no longer receive significant NIE funds, the concept of transition funds should be revived, to aid in shifting to other missions and funding sources, or to aid in orderly and considerate closing of the institution.

Where institutional capacity seems strong and appropriate to NIE's problem-areas, we do not advocate returning to the USOE management methods or to some new variant of institutional support. We sense that organizations in the field do not expect this. We do sympathize with their hopes for stability of funds, but we would argue that institutions which seek such security must be willing to allow substantial NIE involvement in planning and carrying out the work and not expect to be given a large contract and left alone for years. Three-to-five-year awards should be made to the smaller set of institutions, for carefully-worked-out activities oriented to specific goals and needs of NIE programs. Evaluation criteria, dissemination plans, deliverable products, must all be specified, though with the right to redirect them as the years pass.

Our recommendations include both the general goals just outlined, as well as some sketches of a process for moving towards them which we think should begin immediately. However, the need for action on many present lab and center contracts, and for spending Congressionally earmarked FY 1976 funds, will no doubt make it impossible to conduct many institutional reviews in time to integrate decisions on past contracts, current FY76 one-year awards, and future special status. We recognize that some decisions must be made on the quality and relevance of specific projects, without such an overall context to place them in, and we accept that though we deplore the circumstances and history which make it inevitable.

We believe that institutions in danger of losing substantial funds as a result of such judgments should be candidates for the earliest review, not so much on the assumption that high quality has been overlooked completely, but to assure that no re-configuration or change would alter the project-by-project decisions made. For the rest, we would expect that criteria and procedures would be decided and a system in place early in 1976 so that reviews could proceed, with the entire set examined closely within three years from now. (Note that we do not set a target of a definite number of institutions which must be in place in the new relationship by the end of the process. We expect no more than six to eight will qualify, but it may be less.) Extensive discussions with the profession, the public, and Congress may be useful along the way, to explain the goals and the process being followed.

And, in keeping with this schedule, we would expect the 1977 NIE planning process to include attention by the Director to providing the necessary staff and resources for such a review. And competitions for laboratories and centers in Fiscal 1976 could well forecast the future relationships we have in mind, by stating in advance specific NIE priorities in considerable detail, rather than encouraging submission of various plans and hopes that may have little relevance to NIE areas. In this way FY 1976 funds would be used deliberately to emphasize a transition of policy, rather than simply spent on hastily-designed continuations or expansions unrelated to likely future decisions.

Thus, we return to our notion that NIE work towards a smaller set of high quality institutions with which it will work very closely to carry out its missions, managing them towards goals the agency and the institutions can comfortably share. In return, the performers receive firm assurances of long-term support. Evaluation during and at the end of the time-limited charter would determine whether the relationship should be renewed and on what terms. This result will not come about from piecemeal competitions and RFPs. It must be planned for deliberately, and the special status capitalized on for the advantages it brings for both sides, not seen as some sort of continuing embarrassment to be voided as soon as possible. Monthly meetings of directors; program, financial, and management reviews every so often; perhaps an Associate Director for Special Centers; these are some of the management tools that may be needed. The environment now is not that of 1972, with its heady hopes for rapid expansion; NIE policy must reflect that change and must seek to build on what exists in the most careful way possible, not leaving to chance the major decisions about the future of a significant R&D resource.

1

A new role: providing leadership to the R&D system

We recommend that the NIE, through its Director, Council, and a new staff unit, take on vigorous analysis and leadership tasks with respect to the overall education R&D effort in the nation.

From our reading, visiting, and corresponding, we were repeatedly struck by the diversity of what is happening in the field, and the need for NIE to know about it, analyze it, and speak out for the role of R&D. It was the initial intention, and we think a very good one, that NIE be the agency of the Federal government not only for supporting programs, but also for developing policy with respect to educational research and development. NIE does not, and need not, have in its budget all the Federal government's dollars spent in support of education R&D. But it should have enough of the total amount to be a balancer, to bring about coordination and integration among the Federal programs. Sufficient amounts should be allocated to the various mission agencies because they can do a better job of meeting specific agency objectives than NIE is able to do as a general-purpose agency. Also, allocating funds broadly can promote desirable interagency competition.

However, NIE seems at present to give practically no attention to the planning and coordination of the entire national effort in education R&D. Of course there cannot be a tightly-controlled, top-down system of policy planning run by NIE. But NIE should have sufficient staff at a sufficiently high level that it can develop both an informational and an analytic overview and understanding of what is going on in the Federal government and outside, what the key issues and accomplishments are, what the key problems and failures are. Its role in these respects should be intellectual and its approach should be to lead by force of analysis and intelligence rather than to lead by dictating. Its influence over policy in the Federal government would come primarily from the depths of its knowledge and the imagination of its proposals rather than from bureaucratic power. Its impact on research elsewhere will similarly depend on the quality of data, insight, and analysis, but also on aggressive publications, and professional contacts by credible members of NIE staff.

All this will require a very sophisticated research and analysis unit at the very top of NIE. It may also call for broader authority than NIE now has, to obtain access to information and developments going on in other Federal agency R&D programs and outside as well.

The present handling of several potential methods for this role leaves much to be desired. First, a small unit with the responsibility to study and monitor the R&D system is lodged in the Dissemination office, with useful plans but limited support and apparently little relation to broader policy. Second, the two statutorily-required annual reports, one to the Assistant Secretary of HEW for Education on the current status and needs of education research, and another to the President and Congress on education and education research in general, would seem prime opportunities for displaying such analyses and speaking out for how the whole might be more than its parts. Rather, these reports seem to be taken as onerous chores, and the first report to the President only recently limped from the press in the form of a tedious and ill-explained list of contracts and grants.

Now that several uncertainties are behind the Institute and a permanent Director is in place, such a new role can seem more appealing than it would have been under a "zero budget." A good deal of excellent work exists both under NIE sponsorship and elsewhere than can be built upon, and we note again the conceptual framework presented by Sam Sieber in his appended paper. Thus it is not as though the analysis would need to start absolutely from scratch or without guidance. So long as the nation's R&D capacity is as limited as we think it is, every bit of intelligence used in thinking through how to use it best will be well-spent. In the political arena, too, a well-thought-out position commands respect, even if not agreement. NIE can lead the Congress much more forcefully than it has, with strong data on gaps and needs in educational research and development.

VI CONCLUSIONS AND RECOMMENDATIONS

We end by summarizing our conclusions and being specific about our recommendations. Our conclusions are placed in three categories--concerning the R&D system, the NIE, and the regional laboratories and R&D centers. The recommendations are addressed to Congress and the NIE. As a context for these thoughts and suggestions, we want to comment in general about the whole enterprise before moving to specifics about where it is today and how the Federal role might be strengthened.

To understand the effort that the United States is making through NIE to support educational research and development that will produce demonstrated improvements in teaching and learning, one needs a world perspective. Looking at the economically well-developed countries of the world, one finds precious little successful, applied educational R&D. There are some centers in Sweden, the United Kingdom, Germany, Israel, and a few other places where disciplined inquiries about education by social and behavioral scientists are providing the basis for changes in educational policies and program. But the general picture is one in which expectations exceed performance, and measurable improvements in the learning and behavior or students are difficult to demonstrate.

In the less-developed countries educational research and development has even further limitations. The supply of trained social and behavioral scientists available to work on R&D is so limited that the first task in many countries is to prepare capable people. Work now under way tends to focus upon the evaluation of a few experimental projects or upon accurately describing some of the problems that exist prior to attempting their solution.

Seen in this perspective the United States has a rather large and sophisticated commitment to educational research and development. Indeed, many nations of the world look to us for guidance and stimulation in the field. Yet if this is true, why do we find ourselves discontented or even disenchanted with the results of what we are about? The answer to this query is not simple, but it must certainly include the following: 1) Social science research generally is only slowly developing the sophistication that allows it the luxury of predictable results; 2) The problems of bringing about and measuring changes in human learning and behavior are vastly more complex than those of technological change and are cut across by difficulties of cultural tradition, linguistic style, and emotional factors that simply do not exist to the same degree when one is dealing with things rather than people; and 3) The need for improvement in the results of education is so clear and so great that all interested parties (legislators, educational policy makers, teachers, and parents) develop an initial enthusiasm for educational R&D only to have its halting and limited results seem at the least unsatisfactory and at worst inexcusable.

Against this background it is well to ask whether investments in this difficult field are worth the money. The only possible reply is that we must keep plugging away at the difficult problems of learning and teaching and that doing so by orderly scientific inquiry is almost certainly better than by hunch. More is known today because of educational research about how to motivate children, about how to develop and try out methods and materials, and about how to measure outcomes. That we do not have the final answers in any of these realms is not a valid reason for abandoning the effort. For the United States, NIE is the central expression of that difficult and frequently frustrating enterprise.

Conclusions regarding the R&D system

1. The set of people available to do education R&D and link its results to schools is too small for the job, at most no more than 10,000 people altogether, and fewer than that in person-years of effort. Regional laboratories and R&D centers include over ten per cent of the total staff now doing R&D, and consequently must be viewed as a substantial resource.

2. The R&D system outside the labs and centers is fragmented and hard to organize owing in part to the meager number of R&D groups in universities, consulting firms, state education agencies, local school systems, and other places. This fragmentation lays a heavy burden on NIE to reach out in creative ways to bring the scarce and dissociated resources together to work effectively.

3. While basic research must continue, and needs support wherever it can be found, an even more pressing need is for both concrete program development and readily available aid to local schools in using the results of program development done elsewhere. Merging the functions of research, product and program development, and service to schools in institutions such as labs and

centers may cause inefficient use of available energies, and we stress clarification and even possibly a more specialized set of functions at least for some national laboratories.

4. Though we consider there to be a need to protect both university researchers and the renewed national laboratories from undue pressure to serve schools directly, there remains then a gap of technical assistance and support for schools which are trying to improve. Current approaches conceptualize the issue either in mechanical terms of how to "disseminate" from a national R&D bank, or exclusively in terms of local self-help. The former notion is full of substance (products, research findings, teacher guides, exemplary practices) but lacks any motivational basis. The latter is content-free and imbued with social-psychological assumptions about the nature of innovation and self-renewal. Our conclusion is that neither strategy alone will make much difference to education, and that they must be integrated. We are discouraged at the predominance of discussion in much of the field and in key parts of the Executive Branch outside NIE simply in terms of the mechanical model of dissemination.

5. Each of the system's institutions has its own sense of function and interests, and with few exceptions, inquiry into mission priorities is not one of them, nor is deliberate change in response to the results of inquiry--one's own or someone else's. It is thus extraordinarily difficult to involve people in an R&D agenda-setting process in the first place, and harder still to attain credibility for the more searching questions that might be asked about present educational arrangements. NIE should receive credit for attempting to build some consensus around certain areas of focus for its R&D work.

6. A variety of persons and divisions in universities, and in state and local education agencies, are underused or even ignored as parts of the national R&D effort. Minority persons and women are especially underused in the overall R&D effort.

7. We may be seeing a trend in the world of education R&D towards emphasis on marketing, the fierce rush to attract new business for R&D performers, and diminution of emphasis on performance--in research, product quality, or attention to ultimate needs of schools. This legacy of shrinking funds-- the resulting scramble by R&D institutions to maintain themselves--is not likely to change in the next few years, but will have pernicious consequences if it does persist.

Conclusions regarding the NIE

8. The staff we have met seem able, perhaps above the average caliber of government staff, and they seem to be working remarkably productively in face of many difficult circumstances. We conclude that despite recent Civil Service criticisms and resulting uncertainties about future personnel policies, the Director and Council will need vigorously to defend NIE's partial exemption from civil service recruitment and hiring practices. Many more top-level research managers and experienced practitioners will be needed in the next few years, and forced hiring from within government ranks will make that very much more difficult.

9. Staff appear to have diverse perceptions of the major role or objectives of their agency. By this diversity, we mean that program staff appear almost without guidance as to how to relate to individual pieces of work under way through grant and contract, how deeply to be familiar with them, how much to call on others for help in monitoring particular aspects, how much to intervene, how much to be an advocate or critic. We feel such diversity has caused great difficulty for NIE in the field owing to inconsistencies as project officers change.

10. The haphazard policy of monitoring, and the dictum that all new funds be thrown to open competition, seem likely to combine to reduce the incentive for performance of quality work by contractors and grantees, since outstanding performance is recognized only in hit or miss fashion. We note that in several other R&D agencies, continuation grants form a substantial fraction of the awards, and review of such continuations provides at least some quality control. (Though considerable funds were given out in "continuation" awards in recent years, they were in fact incremental funding decisions, not true reviews and fresh decisions to continue a line of work building on the past.)

11. Diversity of approach to monitoring and review by project officers result in part from the past NIE policy of ignoring labs and centers as coherent entities, and relating only to projects. We find such a policy confining and insupportable in the present context and for the near term. It results also from almost total lack of agency-wide attention to issues of evaluation and quality standards which we find hard to justify.

12. While there appear to be excellent relations in many cases between project officers and projects, based on idiosyncratic mutual adjustments in each case, there is strong distrust and miscommunication between the field and NIE at higher levels, since decisions such as general funding for types of activity appear to be made with little or no knowledge about institutions or projects.

13. We are disappointed not only at the inconsistent amounts of information available--and the lack of policy governing such knowledge--at the project and institutional level, but at the level of components of the R&D system as well. We conclude NIE has not yet taken on its rightful role as intellectual leader of education R&D, both within and outside the government setting forth directions and analyses on the subject based on wide knowledge and top-quality analysis.

14. For giving direction to its own funding and management, we conclude that the new NIE program structure centered on problems is prudent in the short-term, though we hope that in time both basic studies and internal research can gain prominence along with extramural work directed towards solving specific problems.

15. The process of choosing sub-priorities and strategies for attaining the goals of each problem area does not reflect as much care for broad participation and building legitimacy, nor for taking into account the work presently under way, as did the initial choice of problem areas, at least in the eyes of the field.

16. We conclude that poor communication with the public and potential performers of NIE's work renders less meaningful the idea that open competition is a useful strategy for finding the best possible performance. Little imagination seems to have gone into linking NIE R&D needs with potential performers through creative adaptations of the typical procurement nethods used for nuts and bolts.

17. In particular, little attention has been paid to bringing the local schools and state agencies into partnership with NIE as agents of R&D, not simply passive recipients at the last stage of an R&D process. Attempts to improve states' ability to disseminate products and knowledge produced elsewhere are an important effort, but to some degree perpetuate notions of undue functional distinctions among agencies and a mechanical dissemination process that we feel do not represent reality, and should not be enshrined in NIE policy. We do not mean to imply a conclusion that no help be given to states to develop an extension or dissemination system, only that state and local agencies' capacities for engaging in other functions of R&D need to be equally developed.

18. While we cannot claim to have made a thorough review of the relationship between NIE and the Department of HEW, signals from a number of sources suggest that there is room for improvement. The considerable emphasis placed on making NIE independent of the Office of Education may have had the effect of giving it an unintended distance from the Secretary's office in HEW. There are indications that NIE has not received supportive leadership in formulation of its policies and in gaining Congressional acceptance of its budgets and appropriations. While NIE is a small agency in HEW in budgetary terms, it has a powerful potential for the education system of the entire nation--an enterprise on which close to $100 billion is expended annually. We conclude, therefore, that both NIE and the Secretary of HEW need to give further attention to developing a relationship that will advance the mission of NIE.

19. Despite the continuing controversy about the value of curriculum reform as a strategy of change in education, we see little clear policy analysis at NIE on the subject.

20. We understand the political pressure for "dissemination" of the results of R&D, but we conclude that NIE has done little to attack the problem as a substantive matter or cluster of issues and competing conceptualizations. We do not think that work in the field can be halted until theory catches up, but we do believe an experimental attitude would be helpful even as action goes forward, and that diverse groups within NIE could be brought together more directly to consider paradigms for change and the various roles of "dissemination" within them. Research on knowledge-utilization could be more extensively funded as an essential basis for policy in this area.

Conclusions regarding the regional laboratories and R&D centers

21. Failure of the laboratories to reach some goals held for them at the outset seems to us chiefly a failure of the government to guide and encourage them towards those goals, not a failure of the concept. The concept of a specialized, separate agency in touch with schools but able to retreat from direct service to test ideas and develop new programs still seems distinctive and sound and worthy of extensive support.

22. Actual performance by the laboratories and R&D centers appears to be widely varied by any standard, and judgment is complicated by the variety of activities within and across institutions, as well as by the complex set of claims and counter-claims about what each lab or center has in the past been directed to do. Regional service, contributions to knowledge, proven product impact or wide dissemination, all compete for preeminence in various eyes. We are concerned lest hasty review of product impact, for instance, be

used as the exclusive measure of a laboratory's present value or future capcity. It was not possible for the consultant group to develop and apply a detailed set of criteria, and we believe the NIE staff should do that work in any case. Considerable work will need to be done, judging from our discussions with staff, to arrive at criteria of quality and relevance that can be shared.

23. Despite this difficulty of assessment, we find at least strong rhetorical agreement among this set of institutions that they do not expect "institutional support" unrelated to performance and to the relevance of their work and that they would welcome straightforward and tough-minded oversight by consistent and qualified government officials and outsiders.

24. We conclude that the persisting dilemma for Federal policy towards the laboratories and centers has been the large number of institutions to which the government seemed committed, and their very mixed quality of work. Since the first few years of each program, efforts have been made to both reduce the numbers and encourage higher quality. We conclude that there may have been more success in eliminating marginal institutions, or at least ending their substantial Federal support, than success in improving the quality of work at those remaining. We find it essential that both trends of policy continue, to result in a still smaller number of institutions dependent for major support on the NIE, with improved quality and relevance of effort, and related to the NIE in special and novel ways.

25. Moving from the present situation to the one we envision--of more diverse ties to universities, and a smaller set of national educational R&D institutions--will not be accomplished effectively by allowing individual project contracts to lapse and beginning new work through piecemeal sole-source awards or open competitions in which labs and centers are simply free to enter along with others. Instead, we conclude that NIE must give priority in planning and procurement to dealing holistically with each of the present set of institutions, with the goal of preserving and strengthening a smaller number with significant potential.

26. We expect that no more than six to eight of the present laboratories and centers would meet comprehensive criteria of quality and relevance to NIE's missions, upon close examination of entire institutions. (Other estimates we have received are even lower.) We do not resolve upon any particular target figure for the number of institutions that should emerge from such a review. Those which do meet criteria of overall quality and relevance will need to be substantially funded to provide a necessary "critical mass" of R&D activity.

27. After a deliberate process of review of all aspects of each present lab or center, and consideration of redirection or reorientation in each case, it may then be appropriate to consider new candidates for a special relationship with the NIE. We conclude that extensive new competitions seeking such candidates are unwise, and that bringing existing non-lab-or-center organizations into such a special status, or encouraging the establishment of new places, must be done with great care.

28. We conclude that in any case, no more than about a third of NIE's program funds be allocated to work at the resulting special institutions.

Recommendations for the Congress

1. That NIE be reauthorized on a long term or permanent, and with authorization of appropriations substantially above the $80 million per year in the administration bill.

2. That explicit authority be given the NIE, if necessary, to allow it to collect data from other Federal agencies concerning their education research and development activities, and from organizations outside the Federal government as well.

3. That the new legislation on the Institute continue the concept of a strong policy-making National Council, including terms longer than the present three years.

4. That the new legislation continue the authority for the Institute to staff its activities flexibly, to allow for bringing in the uniquely talented individuals that are needed.

Recommendations for NIE

5. That the present problem-foci be retained but that these be strengthened by establishing a formal advisory body for each program which could link the Institute with various constituencies for its work in each area, aid in reviewing specific awards thus freeing staff to consult with proposers, and serve as a sounding board to insure that the "definition of the problem" remains current.

6. That much detailed thought be given to the role of project monitor and how NIE wishes monitoring to be performed. Such task force thinking should be followed by appropriate written policies and staff training. In the course of developing such approaches we urge the study of practice in other R&D agencies and consultation and surveying of present grantees and contractors.

7. That the Institute establish an "R&D System Monitoring and Analysis Unit" at the highest level, which can have staff and resources to take active part in the Director's decision-making and planning, and in the required reports to the Department, the President, Congress, and the public. The 1975 Databook is an important first step and should be built upon by the new unit. We would hope that the technical experience of gathering data for the volume might be the basis for a national meeting on sources of data on education R&D and how to strengthen the collection and reporting of necessary indicators, with advice sought both from the field and from other agencies such as NSF with wide system-monitoring responsibilities and experience.

8. That NIE completely review and revise its efforts to inform the R&D system about NIE. We urge the mandatory publication by program offices of their plans and procurement expectations, and names of people who can be contacted for further specific information. If mailing lists continue to pose problems for those who do wish to communicate with various groups we hope outside help will be sought to devise a modern and effective system. We make other recommendations concerning publications under the recommendations on procurement and state and local agencies below.

9. That the NIE devote explicit and public attention to issues of the present value of curriculum development as a strategy for aiding schools. We sense strongly-held and diverse views on the subject, and there appear to be policies made, in part, on private judgments of the merits of the case. But we notice little public airing of the debate. Some writing, convening, and general discussion of the value of Federal support of curriculum development would be a national service, as well as useful in reaching and explaining a key NIE policy choice.

10. That since the goal of quality work requires a diverse array of procurement approaches suited to each type of R&D work, the state of the community of performers, and the preferred role of the NIE staff, NIE should devote resources in the near future to strengthening its repertoire of available tools and the abilities of program managers to use them. We recommend, for example:

    ° Review of the contracts and grants office staff size, and the adequacy of their backgrounds, for insuring timely and relevant advice to R&D program managers on procurement and business management techniques suited to the special circumstances of R&D.

- Closer working relations between contracts staff and program staff, from the inception of design of a procurement, so that plans can take into account the substance of what is wanted, how to reach those who should know of it, and a range of possible ways to conduct the procurement and award the funds. More formal circulation of "good" announcements and RFPs, with key points highlighted by contracts and other staff, would be educational, also.

- Review of R&D procurement procedures used elsewhere in the Department, as well as in AEC, NASA, and NSF to gain a broader sense of options available. Among the possibilities that should be explored are:

  - greater use of restricted competitions, such as by region or qualification;
  - use of review processes which allow program staff to work with proposers at an early stage;
  - based on identification of resources at a university, use of block grants to a dean or other individual with discretion as to how to fund and organize the resources;
  - use of continuous competitions in areas that have continuing interest to the NIE, with open dates and deadlines publically announced long in advance and awards made periodically;
  - funded design competitions.

- Exploration in the near future of the potential of several new publications relating to procurement:

  - a general guide to obtaining NIE funds;
  - explanations and instructions covering all parts of grant and contract competitions, including certifications, competitive range, clarification question phase, negotiations, and award, including notice of Institute commitment to debriefing;
  - monthly or other regular listing of competitions in process and contemplated.

- Establishment of a procedure for recording judgments of past work by grantees and contractors, and procedures for using that information fairly in future competitions or other procurement actions.

- Exploration of the possibility of regional seminars, such as those held by NSF's RANN (Research Applied to National Needs) Program, to acquaint people with research directions and application details, for a number of NIE programs at once.

Complex questions of law and policy arise in some of these suggestions, and we imagine a substantial study effort will be needed over the next year, perhaps including several invitational conferences of people with wide familiarity with R&D management to consider the state of the art of R&D procurement in education and its impact on the R&D system. Continued attention will be needed after development of better tools of procurement, to insure that program staff are aided in using them fully. Few other tasks are more important.

11. In program planning and in procurement, special attention must be paid to overcoming the assumption that schools, school districts, and state agencies are merely the recipients of the fruits of R&D. We suggest as one possibility that NIE establish a state-and-local-agency liaison unit, designed to monitor R&D being done by these organizations, to link them together in useful ways, and to draw their attention to NIE activities of special interest. All procurements should be monitored by this unit, to avoid embarrassments such as in the past when states or local agencies were inadvertently left off eligible lists. The unit could perhaps be part of the R&D System Monitoring and Analysis office we recommended above. In addition, the unit could help these agencies apply or compete when appropriate. We hope NIE will consider a special publication for local school districts and state agencies, designed to make them more aware of R&D generally and the NIE role as well. Contracts with other organizations should have clauses which encourage them to be sensitive to the concerns of teachers and administrators in all phases of their work or which could even go so far as to require participation of local schools' staffs at key points in R&D.

12. Though we agree with the overall direction towards problem-focus, we urge the Director to reserve a modest sum for special opportunities which fall outside the problem structure, and which may suggest new problems needing attention. (We comment below on the need for a general long-range planning and problem-sensing process.)

13. That in connection with the R&D System Monitoring and Analysis unit we recommend, the Director consider helping the Council establish a special advisory group to itself on the R&D system. This group of experts on science and R&D could review the "map" generated by the staff, and comment on it for the Council in reports from time to time. Such a double input would give the Council both expert staff work and analysis, and also some reflection on its meaning for policy by a small group which could build up substantial insight if allowed and encouraged to persist over several years.

14. Because we are concerned not to lose the tie between education-related research and the larger scholarly conversation, we urge that NIE make special efforts to inform diverse elements of the university and college faculties of its programs and opportunities. That NIE find ways in procurements to allow the vital brokering of diverse interests that would not come together without an outside vision. That NIE maintain contact with such general scholarly associations as the Social Science Research Council, American Council of Learned Societies, and American Association for the Advancement of Science. One suggestion that we reiterate in this connection, is the idea of awarding block grants to deans or other university officers to support work by younger faculty, or to carry out a specific set of activities.

15. (a) Because of our conclusion about the under-supply of education R&D personnel, we have given some thought to methods for increasing it. We do not have a plan to recommend, and we recognize that both tight budgets and administration policy argue against some of our ideas. But we commend these scattered notions to the Director and Council for further study. We think that even 5% of the NIE budget could be a very useful investment at this point, if spent in some of the following ways:

    - Awards and incentives to individuals from a variety of disciplines, to pursue graduate study leading to a doctorate related to education research; students to attend wherever they wish, and to finance part of the cost themselves;

    - To convert recent graduates in other fields, a program of post-doctoral fellowships in education research;

    - Mid-career awards to allow mature investigators to ease into a new field without loss of job;

- Apprenticeship opportunities to be required in the terms and conditions of all NIE grants and contracts;

- Awards for graduate study for staff in state and local education agencies, on condition they plan to return to their home base for a period after receiving the degree in a research-related area.

(b) Because of our conclusion concerning the under-use of minority persons and women in the national R&D effort, we recommend that NIE strengthen its policies in support of increasing the participation of these groups in R&D. Such policies could include:

- Special reviews of each procurement to note opportunities for minority firms, and better maintenance of lists of qualified firms for use of programs;

- Aggressive review of hiring by contractors to insure compliance with equal opportunity and affirmative action law and regulation;

- Special attention to expanding training and apprenticeship opportunities for minorities and women in all NIE grants and contracts.

16. Because we sense that attracting the very best staff may depend on offering opportunities for research as well as for monitoring the work of others and because research management requires familiarity with the state of the art in the field, we recommend a modest planning effort to inquire how intramural research activity can be made a part of the normal expectation for NIE staff. We recognize that serious in-house research must await higher funding levels, which will only come as extramural work shows credible results and growing constituencies. However, we strongly urge retention of the NIE Fellows Program as a start, and some forward planning about the shape of an eventual internal research activity.

17. Again we make a recommendation which must await higher funding, but which we feel strongly about. Most research in higher education is done elsewhere than NIE, but even in a limited way NIE could make a contribution now as a prelude to later, more extensive efforts. We have in mind the area of higher education finance as a start. We would hope that eventually

NIE might support R&D pertaining to a variety of post-secondary institutions, including those outside formal schools such as museums, parks, zoos, libraries, and learning networks.

18. Though we understand the need for more short-term-payoff work just now, we recommend that NIE program areas not reject longer, more complex "development" activity without careful analysis. We have in mind a number of neglected areas of the education program of the country, any one of which could profit from some clear thinking and program development and trial. NIE needs, and the needs of schools and teachers may in part conflict here, and we would be disturbed to see too easily written off the whole idea of development.

19. That the NIE establish an internal task force at the very least, if not an ongoing external study and advisory group, to attack the substance of the term "dissemination." We sense diverse conceptualizations within the NIE and insufficient effort to reach synthesis, or even clarification of complementary features or differences. Thinking in other quarters of the R&D system on the subject is not well-advanced either, and could be immensely stimulated and enlarged by some NIE writing and convening on the subject. We urge that internal planning at NIE for its own program consider how the "dissemination" and "problem-solving" approaches will merge or be integrated at the operating level of the school, so that both materials and ideas, as well as the motivation to use them come together for sustained improvement. We have noted the strong potential of "extension agents" for such a role, and we urge that efforts to promote a major program of support in each state be augmented. In particular, the possibility of pursuing a "top-down" strategy in creating a national extension system should not be ruled out. The present "bottom up" strategy (of building on what exists) is useful, but might result in a weak system without common standards or wide visibility and support.

20. That NIE establish a long-range planning process (in addition to the process for choosing the next increments of work within the present problem areas). We recognize that NIE is not completely it own master, and that of course events will press new issues upon the Institute regardless of the best prior planning. But we see no present deliberate activity aimed at sensing the state of education generally to maintain a timely list of candidates for NIE attention--nothing other than the atomistic and informal actions of the Director, the staff, and the Council. Some close work among the Assistant Secretary's office, the National Center for Education Statistics, and Congressional committees would be a start, with perhaps joint

collaboration on some indicators that would serve to alert legislators, the USOE, and NIE to needs to be addressed through their respective methods.

21. The following series of related points constitute our thinking about a course of action towards regional educational laboratories and R&D centers.

    (a) We recommend that NIE adopt a long-range goal of assuming the majority support of a small number of large, high-quality R&D organizations, with whom it will have a relationship different from that with other grantees and contractors.

    (b) The national education R&D institutions which are the goal of the above recommendation should share certain features:

    ° Emphasis on a single mission, closely tied to one of NIE's national R&D priority areas;

    ° A purpose of following ideas from inception to utilization, with specific tasks along the way firmly agreed to in advance;

    ° Stable funding for three to five years, at a level of at least $3 to $4 million per year;

    ° Funding chiefly from a single source--the NIE, with other funds subject to review and possible limitation to maintain essential mission-focus;

    ° Protection from demands to give local services unrelated to field activity that is part of the R&D mission;

    ° Close ties to the major sponsor--NIE, for review of the entire institution at intervals during and at the close of the contract term, including review of finances and management, as well as program.

    (c) We recommend, therefore, that NIE review and revise all present policies that contribute to the present situation, where it is substantially supporting a relatively large number of special institutions, of diverse quality, with varying lengths of contract term, subject to uncoordinated NIE management and review, and inconsistently related to NIE priorities.

(d) We recommend that present regional laboratories and R&D centers be considered candidates for this new relationship to the national R&D effort and redefined mission and obligations.

(e) We recommend that all procedures for dealing with the laboratories and centers for the next few months be immediately reviewed to insure that actions now under way are not in conflict with the comprehensive policy to be outlined below. We recognize there may be cases where the institutional review procedure to be spelled out cannot be completely followed, and action must proceed. But we have in mind particularly not following through on any planned competitions or other funding actions for labs and centers that do not relate directly to NIE problem areas, and which do not lead towards a definitive policy to be followed in future years.

(f) After estimating the available funds for the special institutions according to guidelines of how much in total and how much each, NIE staff should begin a systematic review of each lab and center according to a number of criteria:

- Relevance of work to NIE priority areas
- Quality of work
- Quality of management, both programmatic and financial
- Commitment to utilization of results
- Perceptiveness of how to keep big R&D targeted to help schools
- Willingness to accept the obligations of the new institutional form being proposed

As we have stated, considerable work must be done to refine such a list, make it operational, and set standards in each area. The reviews should take into account potential to contribute, not simply past work alone, as we strongly favor the redirection of capacity before its abandonment. Based on the available funds, up to the target ceiling, some of the highest quality and most relevant institutions should be supported under the conditions we will specify; others would not, but would of course be eligible to compete in other NIE activties.

(g) An independent external panel of R&D practitioners, school and university leaders, and members of the public, should be convened to examine the institutional review process and the resulting judgments and proposed actions, and report their conclusions to the Director and the council.

(h) The institutions selected would receive the type of mission-specific contract for three to five years that we have discussed. Extensive and complex work in a particular NIE problem area would be expected, with timelines, program management, and expected results so far as possible specified at the start. The support would not be institutional, in the sense that the organization could decide how it would be spent. Beyond the development of the initial detailed contract, NIE would reserve the right to intervene strongly in program and management if work falters or priorities change. In return for extraordinary continuity and magnitude of funding, the special institution would agree to these close ties with its sponsoring agency, and to reexamination of the role of its policy board.

(i) Applying the above procedure immediately to all labs and centers is not feasible because of the limited time before most lab/center contracts expire. Thus, only a small number of institutions can receive immediately the detailed review we recommend. The criterion for choosing places to include in the first set for comprehensive review, is the NIE staff estimate that they are unlikely to be successful in finding other funds at NIE, on grounds of quality and/or relevance. Other places with more substantial prospects can safely be postponed, but reviews must be done soon of institutions where piecemeal decision processes seem likely to result in serious loss of Federal support.

(j) However, immediately following completion of reviews of institutions in jeopardy, NIE should begin reviews of all laboratories and centers in the same fashion as outlined in (f) above. These reviews could be spread over several years.

(k) We recommend that NIE not hesitate to end any sense of general obligation to labs or centers which, upon thorough institutional and programmatic review, seem not to have the quality of work or relevance of work that NIE needs, or the likelihood of attaining it upon redirection. No institution should be considered for inclusion in the special category we have been describing simply on the basis of its own track record and desire to continue doing the same. Such a special relation is reserved for highly focussed work of direct relevance to NIE. Other funding mechanisms may be available to allow more self-directed work. The consequence of this recommendation may mean that some institutions actually close, or must reorient their work away from R&D in areas supported by NIE. We are prepared to accept that.

(l) We sense that the concept of "regionality" in the original legislation regarding laboratories was added for political convenience, and we recall the contrary concept of "national" laboratory described by the task force which initiated the notion. Accordingly we recommend to NIE that some care be taken to maintain diversity of location of the remaining special institutions, so that a spectrum of potential problem-foci is noticed and can be placed as candidates on the national R&D agenda through informal interaction of NIE and institution staff and directors. But we urge that NIE avoid continuing or establishing any special institution simply so that all areas of the country have one nearby. We recognize that the closing of sizable installations will be a difficult task. But those places that achieve the special support status we have in mind should do so on the nationally-judged quality and relevance of their work.

(m) Where institutions will lose substantial Federal funds over a short period, we recommend transition funds be awarded to aid in reconsidering of goals, seeking new business, and reorienting staff.

(n) Evaluation criteria for the special institutions should be agreed on in advance, so far as possible, to guide interim and end-of contract reviews. It should of course be made clear at the outset that the institution has a mission-related life-expectancy, not an indefinite tie to the sponsor.

(o) Since time and careful thought are needed to design and implement the extensive review process we have in mind, we recommend that the Director review the present organization of NIE for its adequacy to the task. Since there now is neither structure nor incentive that brings people from various program areas together to consider a particular institution, we think the Director should consider establishing a position to do this, such as an Associate Director for Special Institutions. A critical first task for this person would be to review the procedures, criteria, and result of the several past reviews of laboratories and centers including those by Frank Chase, Frank Westheimer, USOE, and the 1972 panels. This experience must be built upon wherever possible.

The Requirements of a National Educational R&D System

Sam D. Sieber

July, 1975

This paper was prepared as an addendum to "R&D Funding Policies of the National Institute of Education: Review and Recommendations," a report by ten consultants to NIE. Although a member of this group of consultants, the author desired to make a more personal statement than provided for within the framework of the report.

The Requirements of a National Educational R&D System

Sam D. Sieber
NIE Consultant

As a group the consultants on alternative funding policies of NIE has appropriately centered its attention on issues of immediate concern to NIE and the R&D community, to the political and economic context of those issues, and to concrete recommendations for dealing with them. But lurking behind the discussion of current problems, and indeed only partially apprehended by the field itself, are certain assumptions about what constitutes a "national R&D system" in education. To my knowledge, these assumptions have never been spelled out, and it is the purpose of this addendum to express my personal view as to what these might be. This task, I feel, is a vital one.

A national R&D system, we are told, is something that NIE is mandated by Congress to nourish and bring to fruition, something which the group of consultants hopes will become more viable by virtue of their efforts, something which nearly all of us endorse -- and yet, no one seems inclined to define this system. Clearly, it is not something that exists in the natural order of things, but something that we would like to approximate more closely than at present. These considerations have led me to ask: What might be the design requirements of an R&D system in education? These requirements, or "functional needs" to use another set of jargon, need to be laid out in a clear-cut fashion so that one call tell where we are and where we want to go -- or at the very least, to stimulate debate over the underlying dimensions of an R&D system. Also, it might then become possible to communicate more effectively to Congress the fundamental ideals of such a system and the steps which are being taken to achieve them.

Note that I am addressing myself to systemic requirements and not to the ultimate intended outcomes of the system, such as equity, preparation for work, enlightened citizenship, etc. To a large extent, system requirements can be spelled out independently of the desired outcomes. It is like building an atomic conversion plant: you can warm homes or you can make a bomb with it. The basic design requirements are the same. Without a concise list of such requirements, it is hard to imagine how we can generate criteria of accomplishment or check-points for policy making and implementation.

Virtually the only system requirements that have been recognized by NIE-USOE over the past fifteen years have been functional specialization (research, development, dissemination, training, etc.) and to a much lesser degree quality control. (To repeat, impact on practice is not a system requirement strictly speaking, but a desired outcome of a system. It is discussed under "goal setting.") Thus, structures like R&D centers, labs, ERIC, and Title IV training programs were established to foster each of these functions. Since other system requirements were not explicitly envisioned and promoted, these arrangements led to a variety of unanticipated consequences, some of which were quite undesirable, for example: overproduction of academic researchers, meager attention to practitioners' interests and capacities for change, shifting emphases among functions (research, then development, and now dissemination), overlapping of functions within ostensibly specialized agencies, alienation of social scientists, and inattention to substantive goals. In short, narrow emphasis on the single design requirement of functional specialization has been a grave mistake.

To be sure, functional specialization is a basic property of any engineered system. But the difference between a smoothly running engine and a miscellaneous pile of engine parts is that the former meets a number of requirements in addition to functional specialization. Indeed, this particular requirement is adequately fulfilled by a junk yard.

Eventually it might be possible for NIE to generate a two dimensional matrix which shows (1) design requirements, and (2) the mechanisms which are intended to meet each requirement. Then, by monitoring the extent to which each mechanism is doing its job, the matrix might serve as a kind of score board for NIE activities.

I will now turn to the design requirements that I believe apply most critically to a national educational R&D system. Admittedly, these requirements need further specification, a task that NIE should work on continuously.

1. Functional specialization

I have already mentioned this requirement, and since it has become widely accepted and implemented, I will not dwell on it here. NIE should remain alert, however, to emergent needs for new specialties and sub-specialties and be prepared to play a role in supporting their development. The most obvious mechanism is training programs and individual fellowships; another would be "brokering" for people who are just beginning to specialize in a particular role, e.g., planners of innovative new schools, formative evaluators, local information officers, regional extension agents, R&D management consultants, etc. At present this task is not being performed, to my knowledge.

2. Balance among:

   a. Functions (basic research, applied research, product development, systems development, dissemination, technical assistance, training, evaluation);

   b. Performers (social scientists, professional educators, practitioners, NIE staff, other experts);

   c. Settings -- universities, non-profits, profits; government labs, R&D centers, R&D teams; NIE (in-house research);

   d. Decision-makers and influentials -- federal, state and local education agencies; professionals and disciplines; employers and businessmen; minorities;

   e. Supply and demand (R&D resources and the demand for these resources).

Anyone familiar with the history of educational R&D in the past fifty years is aware of the severe, periodic imbalances that occurred among these various functions, performers, settings, and participators in decision-making. Field service and testing were supreme for decades; then field-initiated research had a few halcyon years under the Cooperative Research Act; then product development was tremendously inflated; and now it appears that dissemination is being pushed to the fore. (In view of the new emphasis on dissemination, care should be taken to insure that we do not return to the days of field service in a vicious historical cycle.) Accompanying these extreme swings have been imbalances among types of performers, settings, and decision-makers, with each sector that was formerly privileged becoming embittered as funds began to flow elsewhere. By an awkward stretch of the imagination, this pattern might be seen as balance over time; but do R&D needs really change this much from one period of time to the next?

This point raises the critical issues of the balance between the supply of educational knowledge, products, systems, etc. and the demand for these resources. Virtually all of our R&D effort has been devoted to increasing supply; but what do we know about the state of demand? Do we assess it in any systematic fashion (a point to be discussed later) or do we await Congressional mandates and special-interest pressures to move us in different directions? And what is being done to stimulate demand and to make it more enlightened? Here is another domain of serious imbalance in the national R&D system.

In sum, what is needed is a system which is more concurrently balanced with regard to all of the components mentioned above.

3. Integration (or interrelation) of:

   a. Functions,

b. Settings,

c. Performers,

d. Decision-makers and influentials,

e. Supply and demand.

We know that it is foolish to assume that activities conducted in isolated settings by autonomous performers will contribute to the common goals of educational reform. And yet, NIE has not effectively promoted relationships between research and training, development and dissemination, dissemination and problem-solving, labs, labs and SEA's, labs and universities, academics and practitioners, educational R&D leaders and special interest group leaders, or even researchers in the same field. Here is a domain where statesmanlike leadership as well as imaginative administration is, I think, very badly needed. Purely contractual arrangements can be used to further integration, e.g., requiring opportunities for meaningful apprenticeships in all research grants, requiring plans for linkages with SEA disseminators and other information centers in developmental contracts, requiring plans for coordination between programs and projects in the same problem area, etc. The mechanisms are numerous, but the main point is that integration should be focussed on as a distinct system requirement. In my judgment, greater integration would not only improve the system as a whole, but also the functioning and outcomes of each component part.

4. Continuity in:

a. Policies,

b. Tasks and substantive areas,

c. Personnel,

d. Organizations.

It remains to be seen whether the chronic discontinuities in educational R&D can be remedied without special attention to this system requirement. The history of R&D under USOE is rife with lessons. Almost every fiscal year brought a new list of priorities, a new proportionate allocation among programs, a new threat of being terminated. Turnover of personnel made it almost impossible for outsiders to continue a professional dialogue for more than two or three years or to maintain momentum for some projects which were originally strongly endorsed. Occasionally, after a program had been announced and funded, by the time an investigator could get around to preparing a proposal the program no longer had funds or was in the throes of being "phased out." Ironically, this is the picture that many have of NIE, an agency which was set up to avoid precisely these problems.

With regard to the R&D community at large, it is essential to continue structures and programs which are either too young to bear fruit or have already proven their worth. And even when some activities must be terminated, every effort should be made to salvage the best parts by fostering new amalgams. These tactics are contrary to the announced policy of creating a competitive struggle for existence among R&D performers. In all such struggles, the powerful and the cunning tend to triumph.

5. Adaptability of:

   a. Policies,

   b. Functions,

   c. Personnel (or criteria of selection).

This requirement might seem to be inconsistent with the need for continuity, and many of the discontinuities in federal educational R&D policy have been excused in terms of the need for adaptation to new circumstances. But adaptability as a system requirement must not be confused with bending to pressure or embracing intellectual fads and ideologies. Adaptations can often be made or based upon on-going structures and present policy. For example, labs can be reduced in number and can be induced to give more attention to developing "systems" rather than products, to link up with information dissemination centers, or to take marketing requirements into consideration during the design phase; ERIC can become more active in raising awareness about educational products; R&D centers can be helped to do a better training job; and so forth. The adaptability of existing structures can also be enhanced by providing funds for independent research, new conceptualizations, planning of new departures, and conferences on needed research.

The essential point, however, is that adaptation must be based on continuous, systematic inquiry into the diverse needs and problems of education rather than on the inspirations and ideologies of R&D decision-makers or the pressures of stakeholders. Such inquiry should be informed by (1) a set of explicit design requirements for the R&D system; (2) a continuous study of potential and actual resources, settings and performers of educational R&D (as begun with NIE's new R&D Databook); and (3) a continuous sensing of practitioners' needs, problems and reactions through systematic data-collection. (With regard to the last point, a national "sensing network" to identify the information needs of educators is now being designed under the sponsorship of NIE's dissemination division. This system could be easily adjusted to measure educational needs and monitor reactions to R&D products in general, thereby furnishing continuous, systematic data on the needs and problems of practitioners throughout the nation. The development and installation of this system deserves the Council's fullest support, therefore.)

In sum, a combination of system requirements with data on capacity and data on needs should serve as the basis for all planning, short and long range. Much remains to be done to realize this triadic foundation of planning, however. Finally, as suggested above, adaptations must be constrained by the requirements of balance, continuity and integration. These other system requirements set the boundaries of adaptability, in my opinion, and should not be substantially violated.

6. Excellence or quality-control

In the context of current pressures for dissemination, it is easy to forget that not all information or innovations are really worth disseminating. Obviously, if information or products are unreliable, misleading, or unsuited to the situation, they can have repercussions which are altogether harmful. And even if not harmful, an accumulation of futile experiences with information or products might create an attitude of skepticism toward R&D of all kinds. Further, even when an innovation is workable and relatively effective, the opportunity cost of this particular innovation rather than another might be undesirable. Although these points are obvious, it would seem that we are still wedded to the notion of "the more utilization the better." This assumption has prevented us from realizing that many of the so-called "barriers" and "resistances" to innovation and knowledge-utilization in American schools might actually be beneficial.

The extent to which faddism dictates the adoption of innovations of doubtful merit has been demonstrated in a recent study of virtually all big-city secondary schools. This study reveals that while 46 per cent of these schools are relatively high in adoptions of innovations, most of the innovations adopted by half of these innovative schools are of relatively low quality (as judged by a national panel of secondary school experts). Clearly, quality remains as important an issue as quantity of adoptions.

There are a host of discrete mechanisms for insuring that good work is done and disseminated; and yet, there seems to be continual debate over the quality of educational R&D. The source of this paradox might lie in the vagueness of evaluative criteria, the lack of consensus on procedures, and the failure of a major sponsor--NIE to develop any agency-wide mechanism for assessing quality. Perhaps what is vitally needed is a national task force or commission on the quality of educational R&D. The mandates of such a commission might include: studying the ways in which quality is currently assessed, the criteria best suited to different agencies, the qualifications of the assessors, the extent to which evaluation studies actually influence policy making, the methodology of evaluation research supported by NIE, the dangers of too stringent control, the areas in which control is critical and those where it can be relaxed, and the dimensions of cost-benefit analysis. All functions (RDD&E) might be covered, or different task forces could concentrate on different functions. But whatever the mode of operation, it would seem that an external review of NIE's quality-control procedures would give coherence and focus to this vital design requirement.

7. Goal setting

A national R&D system must be able to formulate and gain consensus on a set of clear-cut objectives regarding output. Because these output goals were not clearly spelled out in the past, emphasis shifted from terminal to instrumental goals, or in simple language, from what the system was supposed to accomplish to how the system was supposed to operate. Thus, the functions of RD&D (plus training) became the salient goals. Beyond these there was the single, overarching goal of "improving educational practice" or simply "impact." But what is meant by impact -- awareness, enlightenment of practitioners, adoption, implementation, adaptation to local conditions, planning, improved learning? And what are the formal aspects of impact that need to be kept in mind, such as scope, depth, duration, and effects? The ultimate goal of "impact on education" is too abstract and normative to communicate NIE's mission or to guide decision-making.

Between this vague ultimate goal and the functions of the system itself there lies a vast no-man's land of intermediate objectives. These objectives need to be specified in operational language so that NIE personnel can use them for guidance and self-assessment, and so that practitioners, legislators and the R&D community will know what NIE is trying to accomplish. Further, they must be prioritized so that resources are not depleted and allocative decisions can be made with a minimum of debate. What are some of these intermediate output goals? Here are a few examples:

- to gain participation of the ultimate consumer in development, field testing and demonstration;
- to improve the discrimination of potential adopters of innovations;
- to invent, install or nurture R&D systems in state and local settings;
- to improve the problem-solving and needs-assessment capacity of practitioners;
- to nourish the development of exemplary practices by practitioners;
- to serve as a "leader" among federal agencies with activities related to educational R&D;
- to encourage lateral communication among schools engaged in similar innovations in the same region.

Not all goal-setting can or should be done by NIE, of course. Every agency that is engaged in the R&D process must be able to set goals that bear on the vital needs of education and that relate to the total R&D picture. Can NIE improve this process of pluralistic goal-setting without undue pressure and control? And what mechanisms are most useful for gaining broad participation in NIE's own goal-setting?

To say that an R&D system needs goals in platitudinous. To conceptualize these goals in a manner which is both logical and precise, and to gain consensus on priorities, is a difficult task which, in my estimation, has barely begun.

8. Recognition of environmental constraints and potential constituencies (to gain realism and legitimacy)

The diversity, autonomy, and competition among the parts, as well as the political constraints and reward systems of the educational R&D community must be taken into account in designing the components of an R&D system. As the consultants' report notes, educational R&D are secondary goals of many agencies and there is a relatively small cadre of full-time R&D performers, who are not necessarily the best-qualified. Further, public education as a profession is low in prestige; interdisciplinary work is rare; hucksterism and faddism are common; there are numerous specialties and special interest groups with conflicting perspectives; practitioners resent the implication that they need to listen to "experts" solve their "problems"; and so forth. Perhaps the best terms to summarize this environment are pluralism and conservatism (or preoccupation with non-R&D goals). My impression is that these features of the environment have not been adequately weighed in the formulation of R&D policy and programs. There has been a naive enthusiasm for educational R&D which has not, and will never be, shared by the vast majority in several key groups: practicing educators, social scientists, activists, government officials, legislators, and laymen. This suggests two general approaches: (1) a cautious, realistic building of individual programs with reference to existing constraints and strategic entry points; (2) a major attempt to gain greater visibility and respect for educational R&D by means of a "showcase" program with wide participation and high impact.

An example of a showcase program would be a national educational extension network. This approach appeals very much to practitioners because it is oriented to their immediate needs and involved personal contact with someone who does not pose as an "expert." In addition, it raises awareness of the diversity and riches of educational R&D resources. It has wide coverage, as a single extension agent can reach approximately 300 clients per year. And it has been shown to work very successfully in three states in a thoroughly-evaluated USOE-NIE pilot program. Not only educators generally but R&D personnel as well would profit from an extension system if it were designed to serve as a massive on-going laboratory and a continuous source of information about the needs and reactions of educators to R&D products. (And eventually the system would redound to the benefit of basic inquiry as appreciation rose for R&D output.) Since training materials and programs are available for preparing a national body of extension agents and information-retrieval personnel in state and regional centers, the time that it would take to install the program would be reduced to a matter of months.

It is my understanding that NIE is currently trying to strengthen the capacity of state agencies to engage in linkage activities. But this "bottom up" strategy, as important as it is, might be too time consuming and produce a highly fragmented system which is impossible to monitor. In view of the potential value and timely relevance of a national extension system, a more aggressive "top-down" strategy might also be considered.

In sum, a showcase program of this kind (similar in visibility to OEO's Headstart) might alleviate many of the political and professional problems that confront the NIE today, and give it much greater connection with our pluralistic educational environment.

Concluding remarks

I do not pretend to have covered within the brief compass of this paper all the design requirements of an R&D system. I do believe that the ones I have mentioned are the most critical, however, and sufficient as take-off points for further elaboration.

Obviously, an important requirement which I have omitted is sheer money; and perhaps in order to achieve the goals set forth in this paper, the level of funding for R&D would have to double or even triple. But I have cast my eyes on the future and tried to imply that the needs of an operating R&D system completely justify whatever resources are necessary to bring it about. If present funding restrictions continue, however, so that these systemic needs cannot be met, then I would urge that we disabuse ourselves of the conceit that we are creating a "national educational R&D system."

Appendix B

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
OFFICE OF THE PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION
ALBANY, NEW YORK 12224

URGENT AND IMPORTANT

Thursday
April 24
19 75

Dear Colleague:

As you no doubt know by now, ten consultants to the National Institute of Education have been asked to review present funding policies for educational research and development, with particular references to policies that may have an impact upon regional educational laboratories and research and development centers.

In order to be fully informed about the present state of educational research and development, the consultants are seeking information and ideas from a wide variety of sources. We held a face-to-face gathering on April 18 in Chicago with leaders of laboratories and centers specifically, and we plan several on-site visits to learn more about laboratory and center activity first-hand.

As Sam Sieber of our consultant group reviewed with the group of laboratory and center people in Chicago, we feel a need for certain items of information from each organization individually. Therefore, we are sending you the enclosed ten questions for written reply. These will allow you to give us the most current program information and funding picture (the precise and full details of which may not be available at NIE), and will also allow you to express candidly your individual opinions and preferences about research and development funding policies. We appreciated the comments many of you made in Chicago, and we have revised these questions again to take your advice into account.

The intent of this request is not to gain a totally comprehensive picture of your organization, but to learn about certain aspects in which the group is most interested and to give you a chance to highlight views you feel should be brought to our attention. We realize you could respond at any length to many of these items, with extensive and valuable information. Please do not misunderstand our request for brief answers wherever possible; the consultants simply wish to give each response personal attention, and the time allowed us by the NIE Acting Director and the Council permits us to review only limited data from each of you.

If you will return your responses to all questions except number 10 to my associate, Mr. P. Alistair Mac Kinnon, at the Washington Office of the New York State Education Department, 1201 16th Street, N.W., Box 100, Washington, D.C. 20036, we will be much obliged. I enclose a postpaid response envelope. For your response to number 10, I enclose a second envelope so that, as we agreed in Chicago, this information can pass directly to Sam Sieber in confidence. A prompt reply, no later than Friday, May 9, 1975, will aid us in making use of your data.

Please feel free to add any thoughts to those requested, or to write to us later if you wish. We appreciated your kind offers of help made in Chicago, and we thank you in advance for your assistance.

With renewed thanks and best wishes,

7

Faithfully yours,

Ewald B Nyquist

Ewald B. Nyquist
On Behalf of the Consultants

Enclosures (3)

STUDY OF ALTERNATIVE FEDERAL RESEARCH AND DEVELOPMENT FUNDING POLICIES IN EDUCATION

REQUEST FOR INFORMATION

April 24, 1975

1. Description of programs

a. Please describe your major activities--programs or projects--in educational research, development, evaluation, and dissemination. We would like to have the following information for each major activity, displayed in the format shown on the attached sheet.

- Short title
- Description of the activity (limited to a sentence or two; please also classify the activity as to its major focus: research, development, evaluation, and dissemination)
- Total amount of funds that will have been invested in the activity by the time of presently scheduled completion
- Source(s) of funds for each activity (name agency or other source(s) and indicate type of funding arrangement, such as grant, contract, subcontract, etc.; include also method of funding, such as competitive award, non-competitive, etc.)
- Number of current professional employees in the activity (FTE)
- Number of professional employees (FTE) estimated to be working on the activity at time of presently scheduled completion
- Number of employees who will be unable to be employed elsewhere in your organization upon termination of this activity (based on presently known future funds)

b. If your organization also engages in activities which are not directly related to educational research, development, evaluation, and dissemination (for example, training, media production, or other strictly service activities), please briefly describe these activities and their proportion of your organization's budget.

2. Budget summary

a. Using whatever 12-month period is your organization's fiscal year, please list in one chart the major activities supported in the most recently completed fiscal year, with the total funds spent on each major activity in that year, and the percent of the total expense each activity represents.

b. Please show in a second unified display each of the major sources of funds to your organization during the same year used in (a) above, with amount of dollars from each, and the percent of total contributed by each source.

c. If conditions during the present fiscal year are substantially different from the conditions presented in the display under (a) and (b) above, please briefly explain the changes.

3. Needed funds Beginning with your next fiscal year, what NIE funds do you feel you realistically need in order to pursue the goals of your organization?

4. Search for other funds Are you pursuing any other source(s) of support beyond the NIE? If so, could you tell us which? What influence has this search for funds had on other activity in your organization? Please be as specific as you can on each.

5. Sources of future funds What is your best estimate of your funding mix in your own fiscal year 1976, from all sources? Please display a projected set of sources, in a format like that in question 2(b).

6. Desired continuations Which projects or major lines of work in your organization are most important to continue beyond the current year, and why?

7. Relations with users and outside sources We feel it is important to understand how you coordinate your work with the perceptions and policies of others such as state and local education agencies, community groups, other laboratories and/or centers, scholars beyond your own staff, and other professionals.

   a. How do groups intended to be eventual users of your products or services influence the development of the programs and projects undertaken by your organization? Has the degree of quality of this influence changed in the past few years? Please indicate concretely the impact of such influence.

   b. During the past year, who was formally consulted, other than your own staff or board/chief academic administrator, on matters of policy such as beginning a new program or reviewing an operating program? Please include a list of actual consultants used.

8. Help to others Beyond your direct programmatic activity in research and product development intended for future benefit to schools and education, how do you view your organization as a source of substantial advice or technical assistance to people in other organizations on problems related to educational research, development, evaluation, or dissemination?

   a. Please discuss the role of your organization, at present, as a resource for people at the state and local education agency level, or in schools, and indicate the level of effort devoted to this activity, if any.

b. Please discuss the role of your organization as a resource for research and development personnel in other research organizations or universities, and indicate the level of effort devoted to this activity, if any.

9. Rationale for institutional support What special features of your organization appear to you to qualify it for "institutional support" from the government? What specific form do you feel that support should take, and why?

10. (NOTE: Put your answer to this question on separate sheets, with the name of the responding organization, and send it to Sam Sieber at his home address, as detailed in the covering letter accompanying this list of questions.)

Relations with NIE What are the major strengths and weaknesses in the relationship between your organization and NIE over the past two to three years? (The more specific you can make your response, the more helpful it will be.)

Please feel free to add any facts or views on these, or related, matters which you feel the consultants should take into account.

Attachments

1. Format for table for program information, Question 1.
2. Format for budget summary and fund-source summary, Question 2, and source of future funds, Question 5.

REGIONAL EDUCATIONAL LABORATORIES
FUNDING AND STAFFING DATA[1]
APRIL 1975

	1974		1975			1976	FTE Professional Staff		
	Total Budget	NIE %	Total Budget	NIE Amt.	NIE %	Funds Desired from NIE[2]	Total	NIE Funded	NIE Marginal[3]
Appalachian Education Lab Charleston, West Virginia	2,013	96%	1,695	1,213	91%	3,100	36	36	22
Central Mid-western Educational Regional Lab St Louis, Missouri	3,178	79%	2,323	1,839	79%	[illegible],900	79	47	40
Far West Laboratory San Francisco, California	5,079	62%	6,289	3,164	50%		129	64	45
Northwest Regional Educational Laboratory Portland, Oregon	6,171	68%	6,056	3,809	63%	4,656	106	74	59
Research for Better Schools Philadelphia, Pennsylvania	4,575	95%	3,500	3,325	95%	4,600	129	129	122
Southwest Educational Development Lab Austin, Texas	3,310	56%	3,183	1,850	58%	2,000	97	62	54
Southwest Regional Lab Los Alamitos, California	2,900	100%	3,060	3,060	100%	3,060	85	84	84
TOTAL	27,226		26,106	18,260		19,316	661	496	426

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[1] Source: questionnaire distributed by consultants. All dollar amounts in thousands.

[2] This figure was given in response to the question: "Beginning with your next fiscal year, what NIE funds do you feel you realistically need in order to pursue the goals of your organization?"

[3] "Number of employees who will be unable to be employed elsewhere in the organization upon termination of their present activity (based on presently known future funds)."

RESEARCH AND DEVELOPMENT CENTERS
FUNDING AND STAFFING DATA[1]
APRIL 1975

	1974		1975			1976	FTE Professional Staff		
	Total Budget	NIE %	Total Budget	NIE Amt.	NIE %	Funds Desired from NIE[2]	Total	NIE Funded	NIE Marginal
Center for Educational Policy & Management University of Oregon	1,305	93%	1,505	1,399	93%	1,133	32	32	29
Learning R&D Center University of Pittsburgh	3,581	82%	3,081	2,137	69%	2,600	124	124	0
Center for the Social Organization of Schools John Hopkins University	589	96%	518	492	95%	450	12	12	9
Center for Study of Evaluation University of CA., Los Angeles	1,294	82%	1,268	1,154	90%	1,072	29	27	27
Center for Vocational Educ. Ohio State University	3,880	69%	3,907	2,344	60%	3,500	89	50	43
National Center for Higher Education Management Systems Western Interstate Comm. for Higher Education	1,959	91%	1,610	1,557	97%	2,650	28	28	28
R&D Center for Teacher Educ. University of Texas	818	86%	910	850	93%	1,194	33	33	33
Stanford Center for R&D in Teaching Stanford University	1,028	99%	1,028	1,016	99%	1,565	32	32	31
Wisconsin R&D Center University of Wisconsin	3,087	91%	3,411	2,698	78%	3,644	102	102	17
R&D Centers TOTAL	15,892		15,628	12,090		15,158	453	426	189
Regional Laboratories TOTAL	27,226		26,106	18,260		19,316	661	496	426
GRAND TOTAL	43,118		41,734	30,350		34,474	1,114	922	615

1 2 3 Same notes apply as in previous table

Appendix C (2)

Analysis of Responses to Q. 10 by Lab and Center Directors: "What are the major strengths and weaknesses in the relationship between your organization and NIE over the past two or three years?"

This analysis is based on the following responses:

Center directors = 8
Lab directors = 5

1. Although the question was worded to permit the directors to mention both positive and negative aspects of their relationship with NIE, the negative responses far outnumbered the positive ones. Only 4 of the Centers mentioned a total of 7 "strengths," as did only 3 of the Labs. As one director noted: "When this question was posed to our key staff, they concluded that they had great difficulty in defining any major strengths in the relationship between (the Lab) and NIE." All of the Centers and Labs mentioned "weaknesses," however -- a total of 36 by the Centers and 34 by the Labs.

2. As shown in the above figures, the Labs and Centers were equally critical of NIE. Further, with regard to only two negative aspects were there somewhat more comments from one type of agency: 4 Labs but only 2 Centers mentioned personnel turnover as a problem; and 3 Labs and only 1 Center mentioned a negative bias on the part of NIE towards these agencies. Otherwise the comments of Lab and Center directors were virtually indistinguishable. Since there was little differentiation, our tabulations below will not distinguish these two kinds of agencies.

3. The "strengths" mentioned by the directors were the following:

	N Directors
Competence, commitment, help of NIE staff	
Specific persons, e.g., project officer, contracts officer, director or associate director	7
Specific group, e.g., pre-NIE staff, certain programs	4
In general	1
	8
Review, monitoring process	
In beginning of NIE	1
Recent improvement	1
Numerous staff members have visited agency	2
	3
Long-term contract	1
Recent evidence that NIE wishes to relate to SEA's	1

4. Description of "strengths" in the relationship

More than half of the directors referred to the helpfulness and competence of NIE personnel. It is noteworthy, however, that they singled out particular persons rather than the staff as a whole. As one Lab director said, "The major strengths in (the Lab's) relationship with NIE are generally attributable to individual NIE staff members." With an enthusiasm that was typical of several directors, one mentioned two individuals in glowing terms:

> X, who has been our project officer for the last two years, has proved to be a highly intelligent, knowledgeable, open-minded and decisive person. She is professionally dedicated and is thoroughly honest about recognizing facts when facts are presented to her. ... The second bright spot has been the presence and active leadership of Y. We are extremely unhappy that he is probably going to be leaving NIE within the next month or two. He is the one professionally trained person we have encountered within NIE middle-management who has both a substantive grasp of the field in which we work and a clear, purposeful vision of the kinds and quality of work that need to be done to solve some of the highest priority problems in American education.

This tendency to focus on individuals would seem to reflect an inability to cite virtues in NIE as an agency. Indeed, several directors were quite explicit about this point. One mentioned the valuable "colleaguial relationships" with NIE staff which were being hampered by "bureaucratic rules." Another summed up the point as follows:

> NIE to date has been less than the sum of its parts. Our relations with individuals within the Institute have been cordial and at a high professional level. But by the time these come up out through the top they bear little resemblance to the interchange at the individual and unit level. ... For reasons "beyond their control" no one within the agency has been able to formulate and hold a position that is consistent with what has been put forth as a "commitment" at an earlier time.

Nevertheless, the tendency of the directors to laud individual staff members reveals that the agency has a strong professional group to build upon. That organizational problems might hamper the work of these individuals will be suggested later when we turn to the major "weaknesses" in the relationship with NIE.

The only other strength that was mentioned by as many as 3 directors concerned the review/monitoring process. However, these comments were highly qualified. One director referred only to the beginning of NIE, and another said that the review process had improved somewhat in the recent past. Two noted that many staff members of NIE had visited their organizations over the years.

5. The "weaknesses" mentioned by the directors were the following:

	N directors
Review, monitoring process	
Quantity	
Too frequent, burdensome, costly	10
Quality	
Visitors not competent to judge	1
Lack of consistent priorities from NIE	2
Poor standards	2
Lack of monitoring in recent years	3
Last minute, crisis-oriented reviews	1
Need to compare products of labs-centers vs. others	1
	13
Discontinuity in policy, plans, procedures, priorities	9
Communications	
Lack of involvement of field, unresponsive to field	6
Lack of communication to field about decision-making process; top clique makes decisions in closed manner; arbitrary decisions imposed on managers	6
Delays in reaching decisions, negotiating contracts, etc.	6
Poor internal communication in NIE, conflict among staff	5
	11
Personnel turnover	6
Procurement	
Dealing with individual projects, programs	4
Competitive basis	3
No provision for start-ups	2
No funds for field-initiated research	1
	6

Negative bias toward centers-labs, hostility	4
Incompetence of staff (lack of training, experience)	3
Clearance of research forms	2
Political ineptitude	1
Dissemination guidelines too restrictive	1
Non-contract demands (for product descriptions, etc.)	1
R&D model (linear, emphasizes research)	1
Failure to recognize distinction between labs and centers	1
Exclusion of postsecondary education from plans, especially regarding dissemination	1

Appendix D

Visits by consultants

1. Regional educational laboratories

Far West Laboratory for Educational Research and Development
San Francisco, California

Southwest Educational Development Laboratory
Austin, Texas

Southwest Regional Laboratory for Educational Research and Development
Los Alamitos, California

Central Midwestern Regional Educational Laboratory, Inc. (CEMREL)
St. Louis, Missouri

2. Research and development centers

Research and Development Center for Teacher Education
University of Texas, Austin

Stanford Center for Research and Development in Teaching
Stanford University

Wisconsin Research and Development Center for Cognitive Learning
University of Wisconsin, Madison

3. Other R&D performers

Center for Research and Development in Higher Education
University of California, Berkeley

Education Development Center, Inc.
Newton, Massachusetts

Stanford Research Institute
Menlo Park, California

Educational Testing Service
Princeton, New Jersey

Personal meetings

American Association of Colleges of Teacher Education (Executive Director)
American Association of School Administrators (President-elect)
American Educational Research Association (President, Executive Director)
Learning Research and Development Center, University of Pittsburgh (Director)
National Education Association (group of staff)
National Science Foundation, Education Directorate (group of staff)
Research for Better Schools, Inc. (Director)
U.S. House of Representatives, Committee on Appropriations, Subcommittee on Departments of Labor and HEW (staff)
U.S. Senate, Committee on Appropriations, Subcommittee on Departments of Labor and HEW (staff)

Teachers College, Columbia University (President)
Harvard University Graduate School of Education (Dean and group of faculty)

Correspondence received from individuals

Stephen K. Bailey
American Council on Education

George Brain
Washington State University

R. Louis Bright
Western Institute for Science and Technology

John Flanagan
American Institutes for Research

J. W. Getzels
University of Chicago

Keith Goldhammer
Michigan State University

Samuel Halperin
Institute for Educational Leadership

Kenneth Hansen
Nevada State Department of education

Lawrence Haskew
University of Texas

Richard Herlig
Kansas State Department of Education

Francis Ianni
Horace Mann-Lincoln Institute, Teachers College Columbia University

Francis Keppel
Aspen Institute for Humanistic Studies

Kenneth Lindsay
Utah State Board of Education

Sidney Marland
College Entrance Examination Board

Ward S. Mason
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Educational Resources Center

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Cary Potter
National Association of Independent Schools

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